AD-A108 464 TENNESSEE STATE DEPT OF CONSERVATION NASHVILLE DIV O--ETC F/G 13/13
NATIONAL PROGRAM OF INSPECTION OF NON-FEDERAL DAMS, TENNESSEE, --ETC(U)
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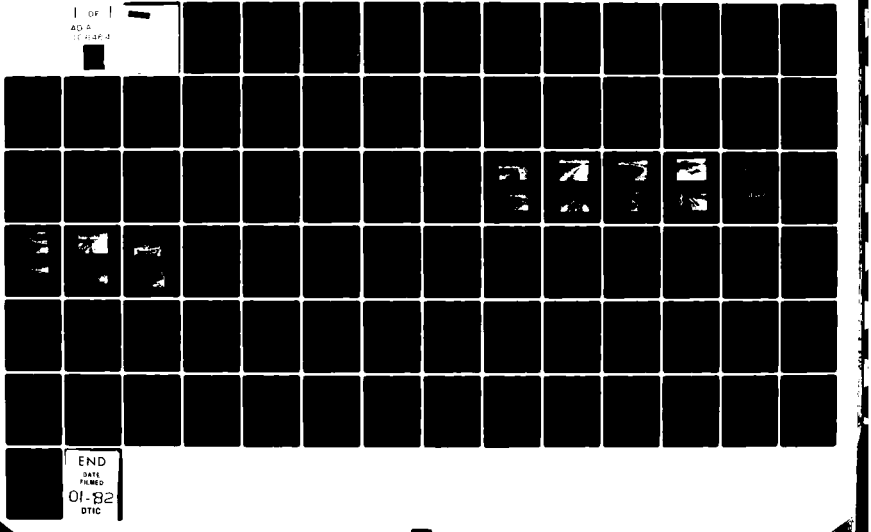

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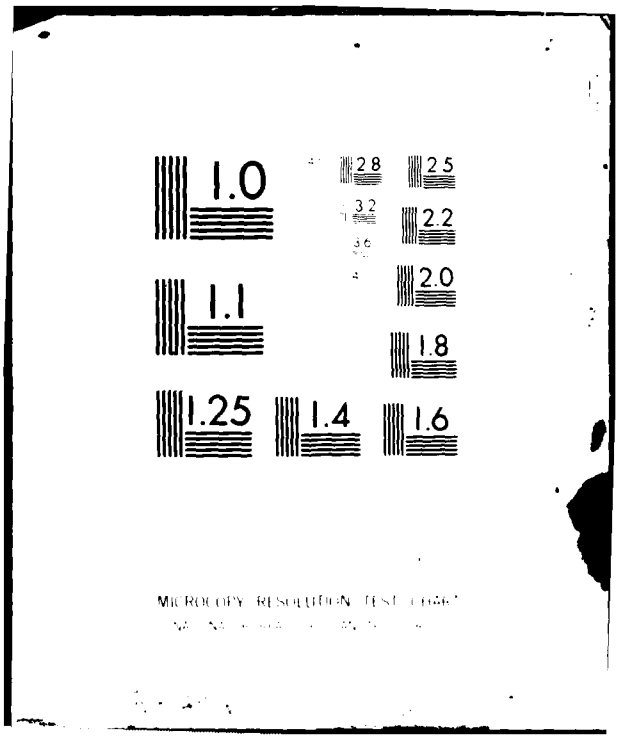
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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A108 464	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) National Program of Inspection of Non-Federal Dams, Tennessee. Construction Products Dam (Inventory Number TN 11320) near Carroll, Tennessee, Madison County, TN., Middle Fork Forked Deer River Basin.		5. TYPE OF REPORT & PERIOD COVERED Phase I Investigation Report
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s) DACW-62-81-C-0056
9. PERFORMING ORGANIZATION NAME AND ADDRESS Tennessee Department of Conservation Division of Water Resources 4721 Trousdale Dr., Nashville, TN 37220		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Engineer District, Nashville P.O. Box 1070 Nashville, TN 37202		12. REPORT DATE July, 1981
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Approved for public release; distribution unlimited

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Dams
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National Dam Safety Program
Construction Products Dam, TN
Carroll, TN
Madison County, TN
Embankments
Visual Inspection
Structural Analysis

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Report is based on the findings of a Phase I investigation of Construction Products Dam on February 5, 1981 in accordance with "Recommended Guidelines for Safety Inspection of Dams, Department of the Army, Office of the Chief of Engineers. The earth dam is 15 ft. high, 675 ft. long, and has a crest width of 13 feet. It is in the small size and high hazard potential category. The dam impounds a 5.5 acre lake used for recreation and water supply. The embankment slopes are moderate and have a well established grass cover. Vehicles have cut deep ruts into the crest. (A cursory inspection on May 4,

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1981, revealed an asphalt roadway conering the crest.) The principal spillway is a 36 inch diameter CMP riser with a 30 inch diameter CMP outlet. A slide headgate is located at the base of the riser to regulate the lake level. The emergency spillway is an irregular shaped earth channel at the left abutment. The channel is relatively flat and in good condition. The dam is classified as "significantly deficient" because the spillway will not safely pass the recommended one-half Probable Maximum Flood.

DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1070
NASHVILLE, TENNESSEE 37202

21 JUL 1981

IN REPLY REFER TO

ORNED-G

Honorable Lamar Alexander
Governor of Tennessee
Nashville, TN 37219

Dear Governor Alexander:

Furnished herewith is the Phase I Investigation Report on Construction Products Dam located near Jackson, Tennessee. The report was prepared under the authority and provisions of PL 92-367, the National Dam Inspection Act, dated 8 August 1972.

The report presents details of the field inspection, background information, technical analyses, findings, and recommendations for improving the condition of the dam.

Based upon the inspection and subsequent evaluation, Construction Products Dam is classified as significantly deficient due to insufficient storage and spillway capacity to pass the probable maximum flood.

The recommendation concerning project modifications to allow safe passage of the design flood and others contained in this report should be undertaken in the near future.

Public release of the report and initiation of public statements fall within your prerogative. However, under provisions of the Freedom of Information Act, the Corps of Engineers is required to respond fully to inquiries on information contained in the report and to make it accessible for review on request.

Your assistance in keeping me informed of any further developments will be appreciated.

Sincerely,

Kenneth W. Ashley, LTC, Deputy Commander
for LEE W. TUCKER
Colonel, Corps of Engineers
Commander

1 Incl
As stated

CF:
Mr. Robert A. Hunt, Director
Division of Water Resources
4721 Trousdale Drive
Nashville, TN 37220

PHASE I REPORT
NATIONAL DAM SAFETY PROGRAM
TENNESSEE

Name of Dam ..... Construction Products Dam

County ..... Madison

Stream ..... Tributary - Dyer Creek

Date of Inspection ..... February 5, 1981

This investigation and evaluation was prepared by the Tennessee Department of Conservation, Division of Water Resources.

Prepared by:

Robert Ramsey
Regional Engineer

Approved by:

Edmond O'Neill
Chief Engineer
Safe Dams Section

Approved by:

Robert A. Hunt, P.E.
Director, Division of Water Resources
Department of Conservation

TABLE OF CONTENTS

LIST OF APPENDICES

PREFACE

This report is prepared under guidance contained in the Department of the Army, Office of the Chief of Engineers, Recommended Guidelines for Safety Inspection of Dams, for a Phase I investigation. The purpose of the Phase I investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I investigation; however, the investigation is intended to identify any need for such studies.

In the review of this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. Additional data or data furnished containing incorrect information could alter the findings of this report. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structures and may obscure certain conditions which might be detectable if inspected under the normal operating environment of the structure.

The analyses and recommendations included in this report are related to the hazard classification of the structure at the time of the report. Changes in conditions downstream of the dam may change the hazard classification of the structure. A change in hazard classification may in turn change the design flood on which the hydraulic and hydrologic analyses are based and may have a significant impact on the assessment of the safety of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions and is evolutionary in nature. It would be incorrect to assume that the present conditions of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspections can there be any chance that unsafe conditions will be detected.

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam ..... Construction Products

County ..... Madison

Stream ..... Trib. of Dyer Creek

Date of Inspection ..... February 5, 1981

ABSTRACT

This report is based on the findings of a Phase I investigation of Construction Products Dam on February 5, 1981. This study was done in accordance with "Recommended Guidelines for Safety Inspection of Dams", Department of the Army, Office of the Chief of Engineers.

The earth dam is 15 feet high, 675 feet long, and has a crest width of 13 feet. It is in the small size and high hazard potential category. The dam impounds a 5.5 acre lake used for recreation and water supply.

The embankment slopes are moderate and have a well established grass cover. Vehicles have cut deep ruts into the crest. (A cursory inspection on May 4, 1981, revealed an asphalt roadway covering the crest.)

The principal spillway is a 36 inch diameter CMP riser with a 30 inch diameter CMP outlet. A slide headgate is located at the base of the riser to regulate the lake level. The emergency spillway is an irregular shaped earth channel at the left abutment. The channel is relatively flat and in good condition.

The dam is classified as "significantly deficient" because the spillway will not safely pass the recommended one-half Probable Maximum Flood.

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
CONSTRUCTION PRODUCTS DAM
MADISON COUNTY, TENNESSEE

SECTION 1 - GENERAL

1.1 Authority - The Phase I inspection of this dam was conducted under the authority of Tennessee Code Annotated, Section 70-2501 to 70-2530, The Safe Dams Act of 1973, and in cooperation with the U. S. Army Corps of Engineers under the authority of Public Law 92-367, The National Dam Inspection Act.

1.2 Purpose and Scope - The purpose of a Phase I investigation is to develop an engineering assessment of the general conditions of a dam with respect to safety and stability. This is accomplished by conducting a visual inspection; reviewing any available design and construction data; and performing appropriate hydraulic, hydrologic, and other analyses. A comprehensive description of the Phase I investigation program is given in Recommended Guidelines for Safety Inspection of Dams, by the Department of the Army, Chief of Engineers, Washington, D. C. 20314.

1.3 Past Inspections - A field survey of the dam was conducted on April 4, 1980, for inventory purposes by the Tennessee Department of Conservation, Division of Water Resources. The dam was identified at that time as having a "high" hazard potential due to downstream development.

1.4 Details of Inspection - The Phase I inspection was conducted on February 5, 1981. The weather was partly cloudy and windy with temperatures in the low 30's.

1.5 Inspection Team Members - The inspection was conducted by the following State personnel:

Robert Ramsey, Regional Engineer
George Moore, Regional Engineer
Edmond O'Neill, Chief Engineer

SECTION 2 - PROJECT DESCRIPTION

2.1 Location - The dam is located in Madison County about 4 miles north of the Jackson, Tennessee city limits near the Carroll community. It is situated on a small industrial area owned by Construction Products, Inc. of Tennessee and impounds a tributary of Dyer Creek. The dam is located (not shown) on the U. S. Geological Survey 7.5 minute Jackson North, Tennessee quadrangle at 35°43'15" north latitude and 88°49'20" west longitude. Location maps are provided in Appendix B.

2.2 History of Project - The dam was constructed in 1972 by the present owners, Construction Products, Inc. of Tennessee. According to the owner, the USDA Soil Conservation Service was consulted on the project but no formal technical assistance was obtained and there are no design drawings or specifications. The owner also indicated that there have been no problems with the dam since its construction.

2.3 Size and Hazard Classification - According to OCE guidelines, the dam is in the small size category with a height of 15 feet and a storage capacity of approximately 27 acre-feet at normal pool and approximately 50 acre-feet at the top of the dam.

The dam is classified in the high hazard potential category due to the downstream presence of several storage, maintenance, and manufacturing buildings owned and operated by Construction Products, Inc. (photo nos. 17 & 18).

2.4 Description of Dam and Appurtenances

2.4.1 Embankment - The dam is an L-shaped compacted earthfill structure. It is constructed of soil obtained from the adjoining hillsides. The dam has a maximum height of 15.4 feet measured from the low point on the crest to the drain pipe invert. The left section of the embankment is approximately 6 feet high and 275 feet long. The right section is 475 feet long, 13 feet wide, and varies in elevation from 388.6 to 389.8 feet.

The upstream slope is 4.6H:1V above the water surface. The downstream slope is 3.4H:1V, flattening to 6H:1V at the toe.

The geologic formation of the area consists of thick loessial deposits of silty clays of the Lexington Series. These soils are highly erodible and are generally of low shear strength.

2.4.2 Principal Spillway - The principal spillway consists of a 36 inch CMP riser enclosed in a 48 inch CMP anti-vortex baffle (photo no. 11). The outlet pipe is a 30 inch CMP (elevation 373.2), approximately 115 feet in length (photo no. 12). The pipe reportedly has anti-seep collars. It empties into a small earthen stilling basin that partially submerges the pipe. The outlet channel runs along the toe of the right embankment section.

2.4.3 Drawdown Facilities - A manually operated slide headgate of unknown size is located at the bottom of the upstream side of the riser. The operating stem is bolted to the riser and extends above the water surface (photo no. 10).

2.4.4 Emergency Spillway - The emergency spillway is an unlined earth channel at the left abutment (elevation 386.4). The channel is very shallow and approximately trapezoidal in shape (Sheet 3 of 5, Appendix B). Downstream of the dam, the channel becomes less defined and enters a wide flat pasture (photo nos. 14, 15, & 16).

2.4.5 Downstream Channel - A narrow excavated earth channel leaves the stilling basin and runs parallel to the toe of the right embankment section. It intersects the original creek channel just below the dam. The creek channel has earth sides and is on a gentle slope. It runs along the west side of storage and manufacturing facilities owned by Construction Products, Inc.

2.4.6 Reservoir and Drainage Area - The dam impounds a reservoir with a surface area of about 5.5 acres and a normal storage capacity of approximately 27 acre-feet. At the top of the dam, the reservoir capacity was estimated to be 50 acre-feet.

Slopes in the 180 acre drainage area average about 5%. According to published soil surveys, the predominant soils in the drainage area are the Lexington and Memphis silt loam.

SECTION 3 - FINDINGS

3.1 Visual Findings

3.1.1 Embankment - The slopes of the embankment are uniform and protected with a well established grass cover (photo no. 2). There was no evidence of instability, uncontrolled seepage, serious erosion, or undesirable growth. The upstream slope of the left section is protected against wave action by a 15 inch high concrete wall (photo no. 5). There is minor erosion behind the wall, where several saplings are growing (photo no. 6). The upstream slope of the left section has only grass protection (photo no. 9) where a small bench caused by wave action has formed at normal pool level.

The downstream slope was slightly wet, caused by thawing of the frozen ground. There is apparently no toe drain system. A small animal burrow was found near the toe above the drain pipe.

The crest of the dam has deep gullies caused by vehicular traffic (photo no. 3). There is no erosion protection except for a small amount of gravel at the south (left) end (photo no. 4).

3.1.2 Principal Spillway - Only the visible portions of the riser and outlet pipe could be inspected. There was no evidence to indicate that any problems exist with the system. The 48 inch CMP anti-vortex baffle appeared to be in good condition. The outlet pipe was carrying a clear flow and was partially submerged in the stilling basin. The stilling basin is partially lined with small gravel and is in good condition. A shallow drainage ditch runs along the right toe from the hillside and empties into the stilling basin.

3.1.3 Drawdown Facility - The drain gate was reportedly last operated 3 or 4 years ago to lower the lake for shoreline maintenance. The gate was not operated during the inspection.

3.1.3 Drawdown Facility - The drain gate was reportedly last operated 3 or 4 years ago to lower the lake for shoreline maintenance. The gate was not operated during the inspection.

3.1.4 Emergency Spillway - The emergency spillway is poorly defined and has little protective cover. There was no evidence of serious erosion. The owner stated that the spillway has carried flow several times in the past but flow has never overtopped the dam. Flow through the channel would not be expected to impinge on the downstream toe of the dam. A large precast concrete slab is lying in the entrance channel adjacent to the dam but is not considered to be a major obstruction (photo no. 14).

3.1.5 Downstream Channel - The downstream channel was in good condition and contained no significant obstructions or debris.

3.1.6 Reservoir and Drainage Area - There was no evidence of significant sedimentation, although it has been a problem in the past due to erosion of the adjacent hillsides. A small buildup of silt was observed in the upper end of the reservoir. To help decrease sedimentation, a shallow drainage channel has been constructed along the west shoreline to channel runoff from the eroding hillside directly into the emergency spillway. Reservoir slopes are gradual to moderate.

The major land uses in the drainage area are pasture and crop farming with woods along the creek channel. There have been few changes in land use since the dam was constructed. The major portion of the drainage area is separated from the lake by a small road embankment.

The lake is reportedly connected to this area by a 5 foot pipe extending through the roadfill. The pipe could not be located and is believed to be silted in.

3.2 Review of Data - No design drawings, specifications, or other engineering reports were available for review. Construction information included in this report was obtained by conversations with the owner.

3.3 Static and Seismic Stability - The actual margin of safety for static stability could not be determined because the engineering data required for analytical stability analyses are not available. An assessment based on visual evidence and engineering judgment would indicate a stable structure.

The dam is located in Seismic Zone 2. No seismic analysis is required for the Phase I inspection provided static stability conditions are satisfied and conventional safety margins exist.

3.4 Hydraulic and Hydrologic Analysis - According to OCE guidelines, the recommended minimum design flood for a small size dam in the high hazard potential area is one-half of the probable maximum flood (½ PMF). Analysis indicates that under Antecedent Moisture Condition II (AMC II) the ½ PMF would overtop the dam for about 1 hour with a maximum depth of 0.3 feet. Further analysis indicates that the spillway could pass the 100-year flood, assuming Antecedent Moisture Condition III, with 1 foot of freeboard at the west end of the dam.

3.5 Conclusions and Recommendations

3.5.1 Conclusions - Based on visual evidence and engineering judgment, the dam is considered to be structurally stable. The slopes are moderate and there was no evidence of cracks, slides, differential settlement, serious erosion, or uncontrolled seepage. Vegetation and wave protection on the slopes are adequate. A hard protective surface is needed on the crest to prevent erosion.

Hydraulic and hydrologic analysis indicates that the spillway capacity is inadequate to safely pass the minimum one-half probable maximum flood as recommended by OCE guidelines for dams of small size and high hazard potential.

The project is located in Seismic Zone 2. Stability analysis of the embankment with earthquake loading is not deemed necessary for the Phase I investigation.

The dam is given a deficiency classification of "deficient" because the spillway fails to pass the recommended design flood.

3.5.2 Recommendations - The owner should:

1) Provide additional storage and/or spillway capacity to allow the dam to safely pass the recommended ½ PMF.

2) Provide a protective surface on the crest to accommodate vehicular traffic. (An asphalt roadway was observed on 5/4/81.)

3) Establish a program for general maintenance and regular inspection.

4) An emergency action plan should be established to alert downstream residents in case a major problem develops with the project.

SECTION 4 REVIEW BOARD FINDINGS

The Interagency Review Board for the National Program of Inspection of Non-Federal Dams met in Nashville on 21 May 1981 to examine the technical data contained in the Phase I investigation report on Construction Products Dam. The Review Board considered the information and recommended that (1) an emergency action plan be developed, including a warning system to alert downstream residents, in the event a serious condition develops with the dam, and (2) findings from a cursory inspection on 4 May 1981 be included in the report. They agreed with other report conclusions and recommendations. A copy of the letter report presented by the Review Board is included in Appendix G.

APPENDIX A

DATA SUMMARY

APPENDIX A
DATA SUMMARY

A.1 Dam

A.1.1 Type - Earthfill

A.1.2 Dimensions and Elevations - Elevations are expressed in feet and were referenced from the water surface, estimated to be elevation 385 from available topographic maps.

a. Crest length - 675'
b. Crest width - 13'
c. Height - 15.4'
d. Crest elevation (low point) - 388.6'
e. Embankment slope, U/S - 4.6H:1V
f. Embankment slope, D/S - 3.4H:1V
g. Size classification - Small

A.1.3 Zones, Cutoffs, or Grout Curtains - A keyway extends to firm clay. Its size and depth are unknown.

A.1.4 Instrumentation - None

A.1.5 Operation and Maintenance - General operation and maintenance of the structure is carried out by the owner as needed.

A.2 Reservoir and Drainage Area

A.2.1 Reservoir

a. Normal Pool

1) Elevation - 385.3'
2) Surface area - 5.5 acres
3) Storage - 27 acre-feet
4) Pool length - 750 feet

b. Flood Pool

1) Elevation - 386.4 feet
2) Storage - 34.5 acre-feet

c. Maximum Pool (top of dam)

1) Elevation - 388.6'
2) Storage - 50 acre-feet

A.2.2 Drainage Area

a. Size - 0.28 mi^2
b. Average slope - 5%
c. Soils - Lexington silt loam, Memphis silt loam
d. Land use - Farmland, pasture
e. Runoff (AMC II)

1) PMF - 23.8 inches
2) ½ PMF - 11.9 inches
3) 100-year flood - 3.8 inches

A.3 Outlet Structures

A.3.1 Drawdown Facilities

a. Type - Slide headgate - unknown size
b. Control - Manual

A.3.2 Service Spillway

a. Type - 36 inch CMP riser - 30 inch CMP outlet
b. Crest elevation - 385.3' (approximate)

A.3.3 Emergency Spillway

a. Type - Unlined earth channel, irregular shape
b. Crest elevation - 386.4'

A.4 Historical Data

A.4.1 Construction Date - 1972

A.4.2 Designer - None

A.4.3 Builder - Construction Products, Inc.

A.4.4 Owner - Construction Products, Inc.

A.4.5 Previous Inspections - None

A.4.6 Seismic Zone - 2

A.5 Downstream Hazard Data

A.5.1 Downstream Hazard Potential Classification

a. Corps of Engineers - High
b. State of Tennessee - 1

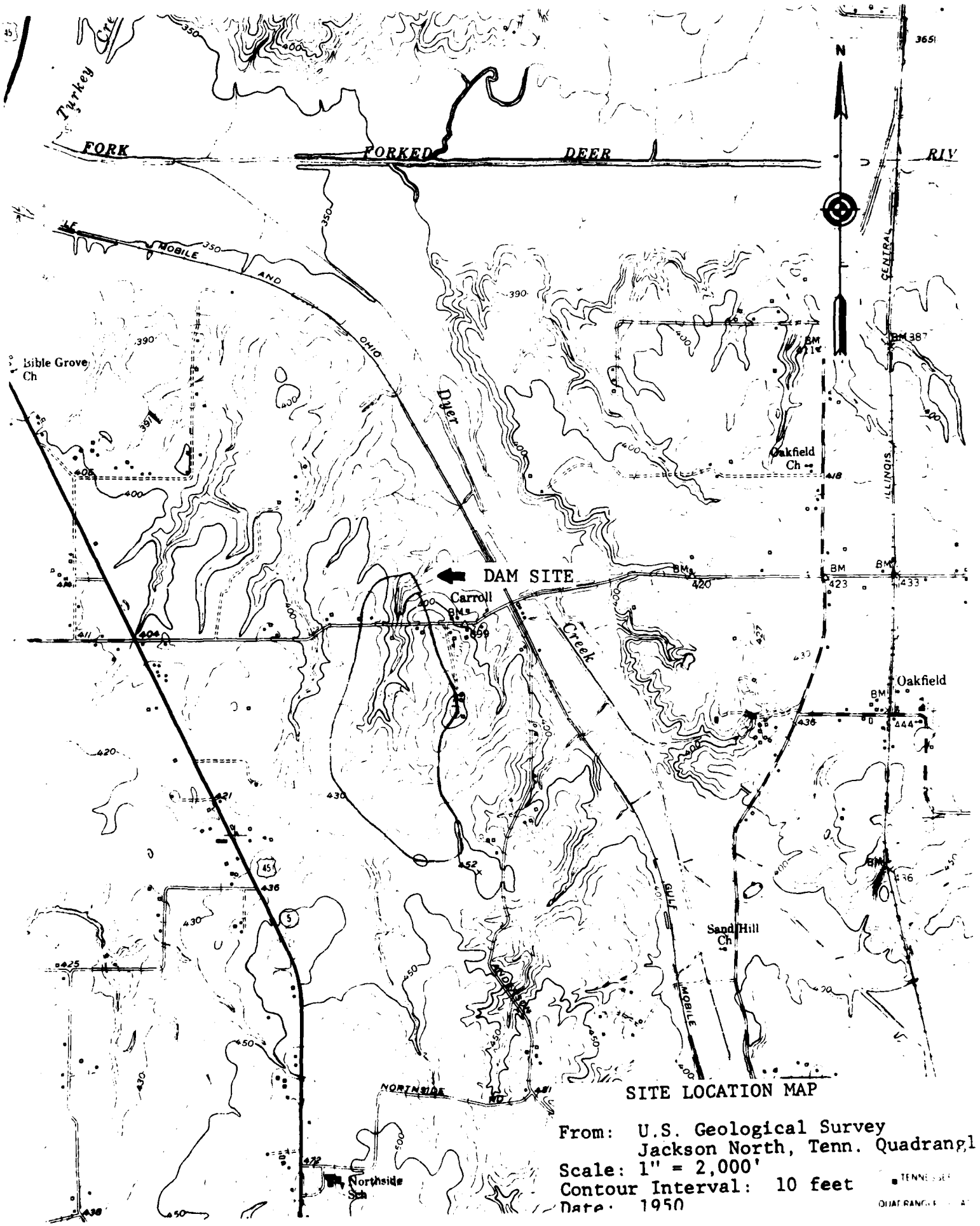
A.5.2 Persons in Likely Flood Path - Workers at Construction Products, Inc. of Tennessee

A.5.3 Downstream Property - Storage, maintenance, and manufacturing facilities at Construction Products, Inc.

A.5.4 Warning Systems - None

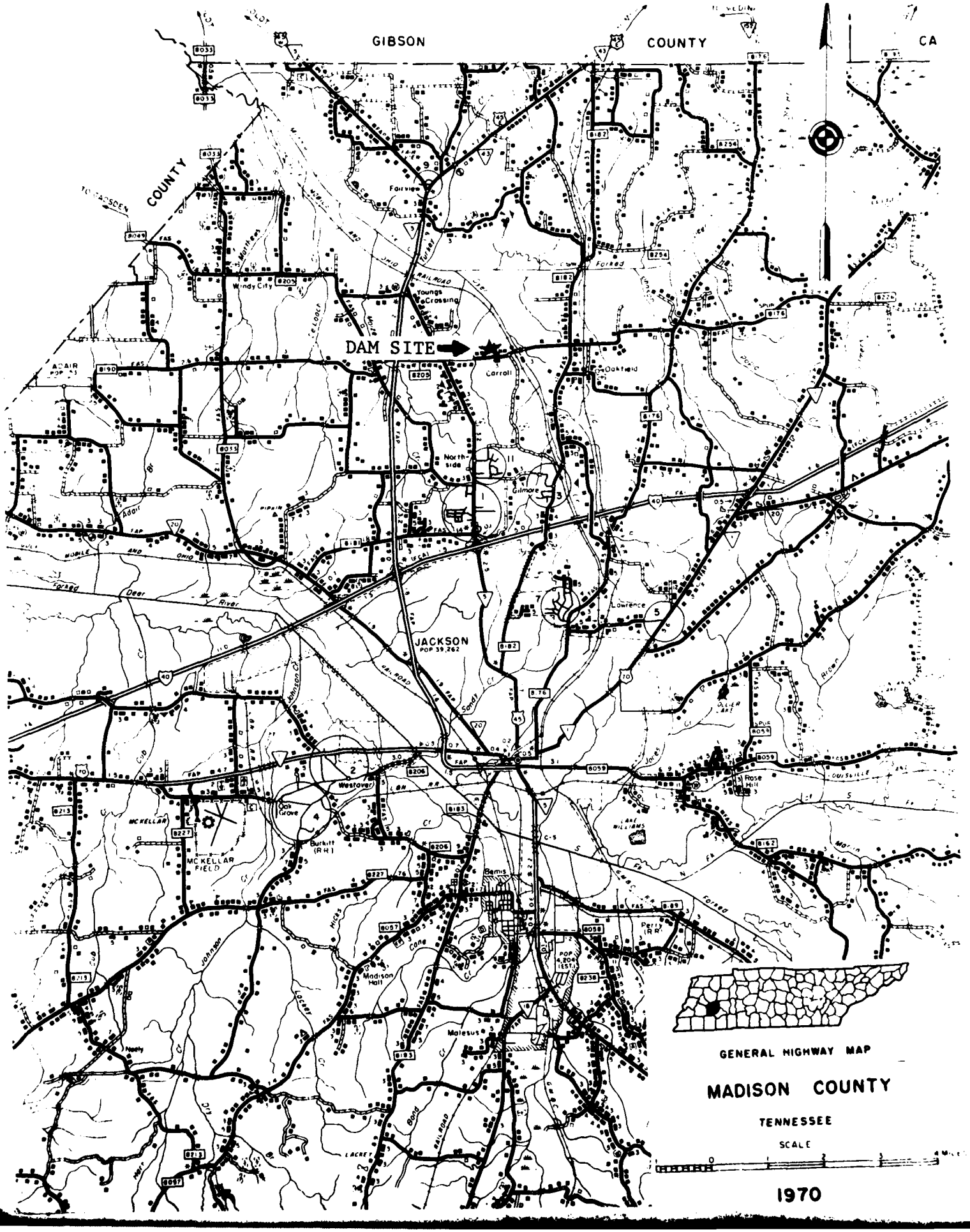
APPENDIX B

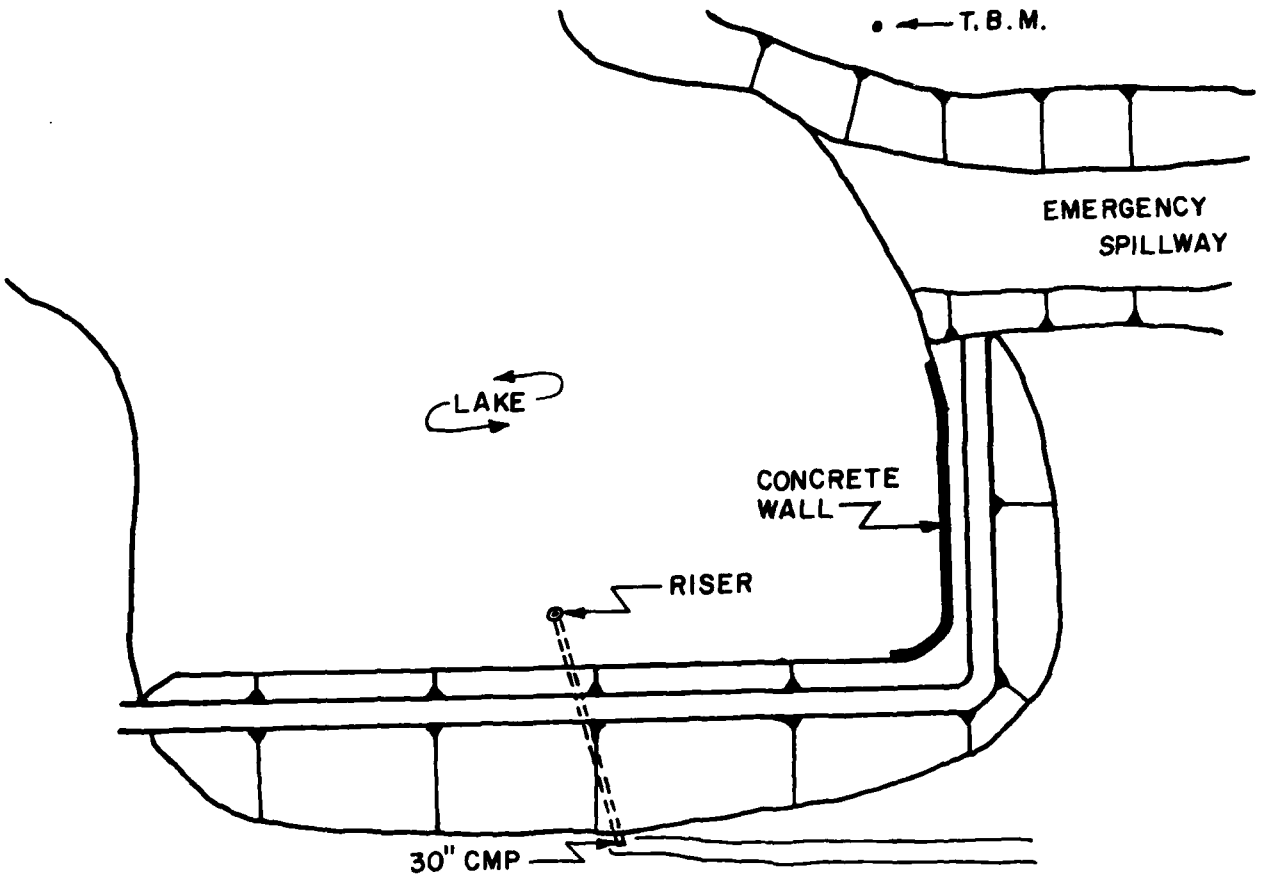
SKETCHES AND LOCATION MAPS



SITE LOCATION MAP

From: U.S. Geological Survey
Jackson North, Tenn. Quadrangl
Scale: 1" = 2,000'
Contour Interval: 10 feet
Date: 1950

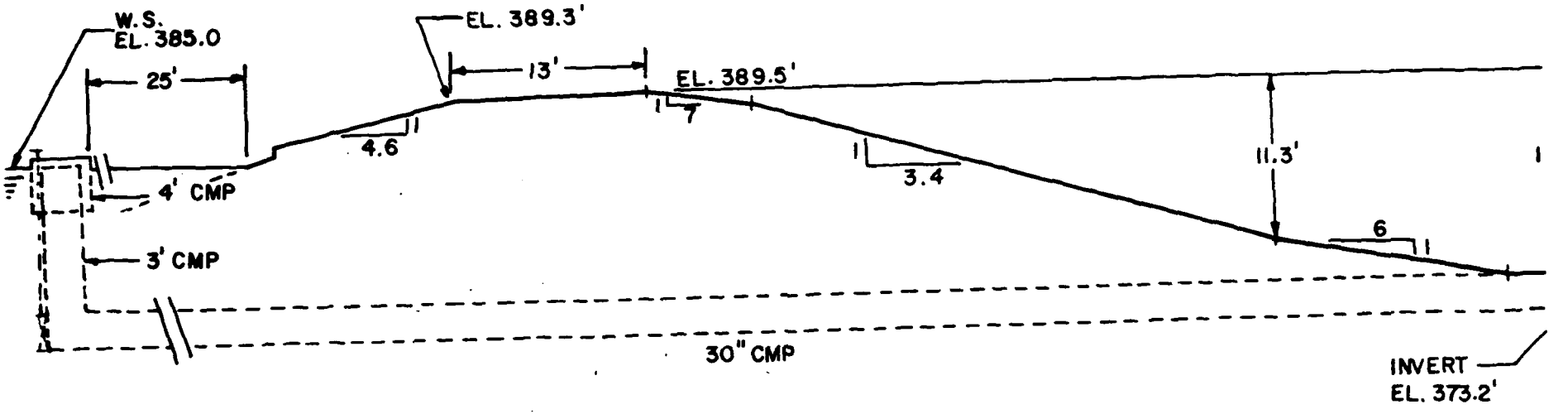

GIBSON
COUNTY
COUNTY
DAM SITE
JACKSON
POP 39,262
Fairview
Windy City
Youngs Crossing
Carroll
Oakfield
Northside
Gilmore
Lawrence
Westover
Oak Grove
Burkitt (RR)
McKELLAR FIELD
Bemis
Madison Hall
Malesus
Perrin (RR)
Rose Hill
GENERAL HIGHWAY MAP
MADISON COUNTY
TENNESSEE
SCALE
1970



NOTE: ELEVATIONS REFERENCED TO T.B.M (FLAGGED NAIL IN TELEPHONE POLE) WITH ASSUMED ELEVATION OF 389.0'

GENERAL PLAN
N.T.S

CONSTRUCTION PRODUCTS DAM
DRAWN BY: M.J.F
DATE: 11 MAR 81
SHEET: 1 OF 5

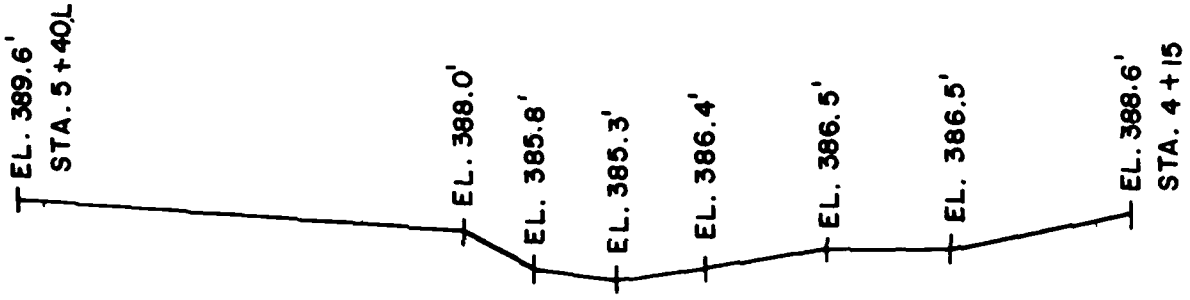


MAXIMUM SECTION AT STA. 0+00

SCALE: 1"= 10'

NOTE: LAKE WAS APPROX. 0.3' BELOW NORMAL POOL ON DATE OF SURVEY (4-24-81)

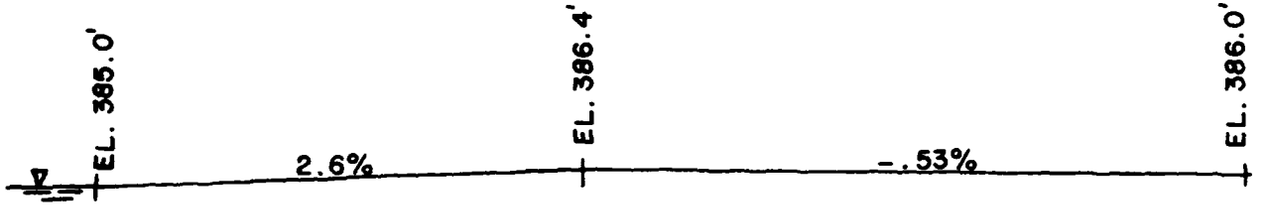
CONSTRUCTION PRODUCTS DAM
DRAWN BY: M.J.F.
DATE: 13 MAR. 81
SHEET: 2 OF 5



EMERGENCY SPILLWAY PROFILE

SCALE: 1" = 20'

CONSTRUCTION PRODUCTS DAM
DRAWN BY: M. J. F.
DATE: 19 MAR 81
SHEET: 3 OF 5



EMERGENCY SPILLWAY PROFILE
SCALE: 1" = 20'

CONSTRUCTION PRODUCTS DAM
DRAWN BY: M.J.F.
DATE: 19 MAR 81
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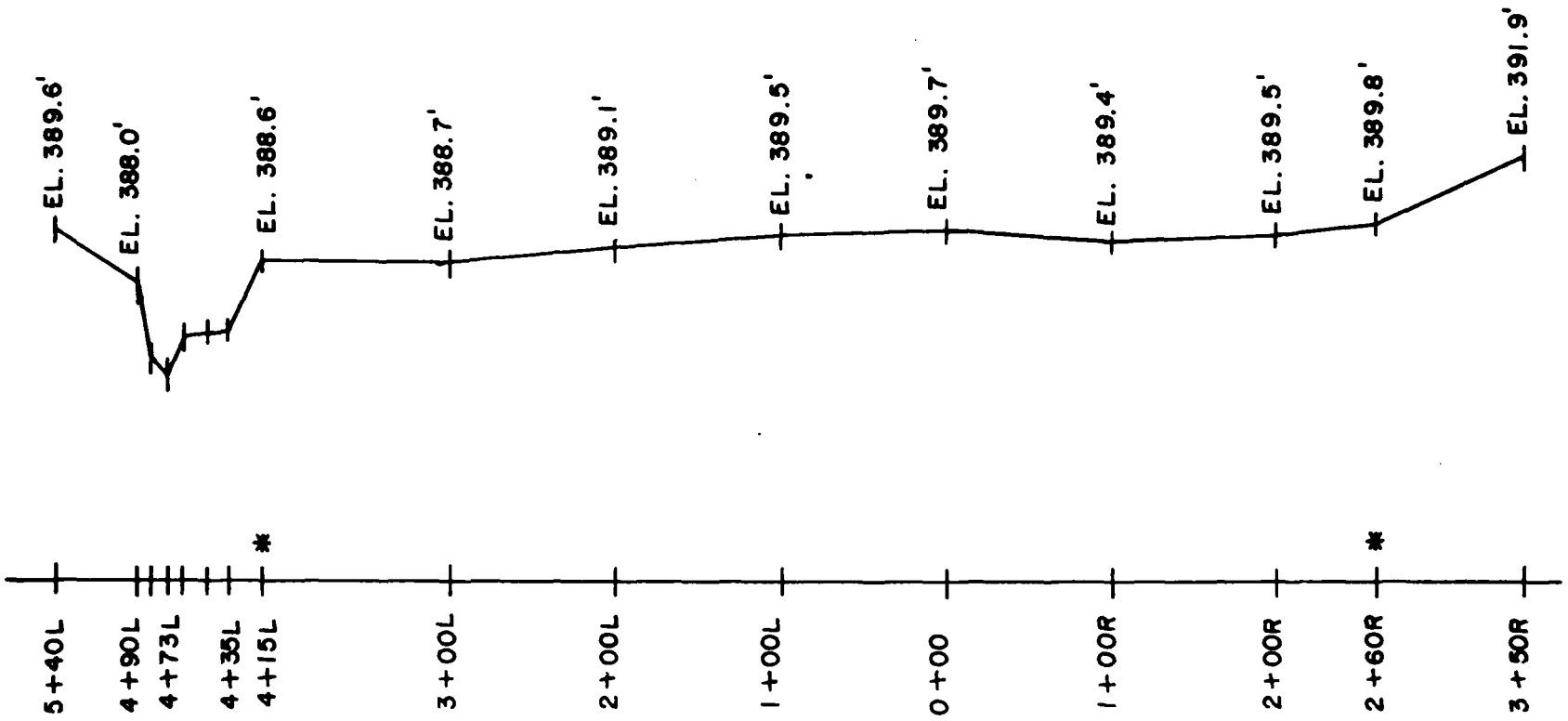


* END OF DAM

CREST ℄ PROFILE

HORO. SCALE: 1" = 100'

VERT. SCALE: 1" = 5'

CONSTRUCTION PRODUCTS DAM
DRAWN BY: M.J.F.
DATE: 19 MAR 81
SHEET: 5 OF 5

APPENDIX C

PHOTOGRAPHIC RECORD

PHOTOGRAPHIC LOG

Photo No. 1 - View of the dam and lake.

Photo No. 2 - View of the downstream slope of the right section of the L-shaped embankment.

Photo No. 3 - Erosion on the crest of the right portion of the embankment caused by vehicular traffic.

Photo No. 4 - Erosion of the crest at the left end caused by vehicular traffic.

Photo No. 5 - View of a concrete wave wall along the upstream slope at the left portion of the embankment.

Photo No. 6 - Minor erosion behind the wave wall along the upstream slope.

Photo No. 7 - View of a collapsed wooden pier on the upstream slope.

Photo No. 8 - View of the right section of the dam.

Photo No. 9 - View of the upstream slope of the right section of the dam.

Photo No. 10 - View of the riser and collapsed pier.

Photo No. 11 - View of the principal spillway riser.

Photo No. 12 - View of the principal spillway outlet consisting of a 30 inch CMP.

Photo No. 13 - View of the stilling basin and drainage channel at the principal spillway outlet.

Photo No. 14 - View of the entrance to the emergency spillway located at the left abutment.

Photo No. 15 - View of the emergency spillway exit channel. The channel discharges into a large open field.

Photo No. 16 - View of the emergency spillway entrance channel.

Photo No. 17 - View of storage and maintenance facilities located downstream of the dam.

Photo No. 18 - View of plant facilities located directly below the dam.

PHOTO NO. 1

PHOTO NO. 2

PHOTO NO. 3

PHOTO NO. 4

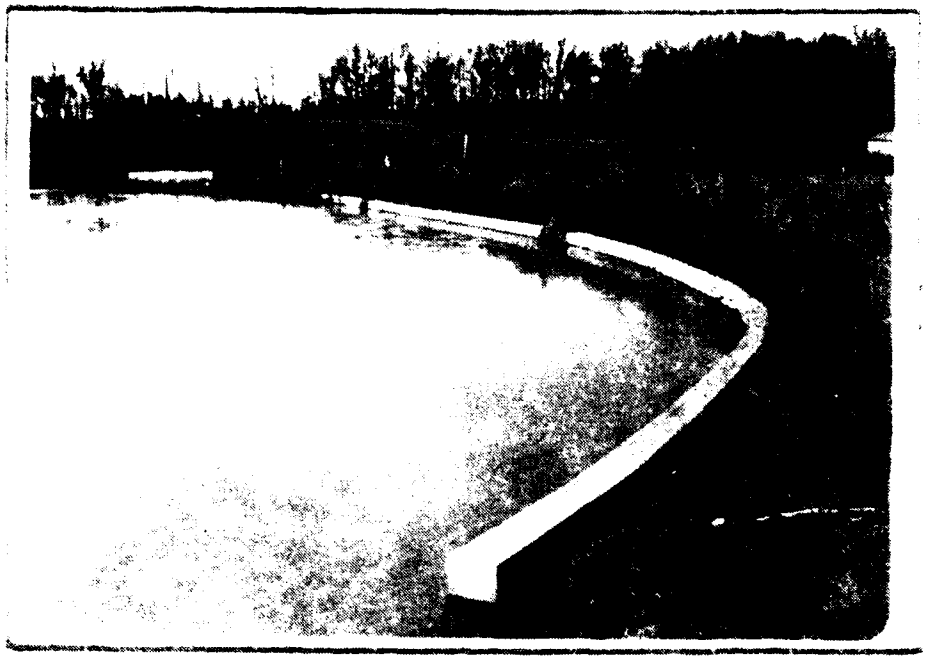


PHOTO NO. 5

PHOTO NO 6

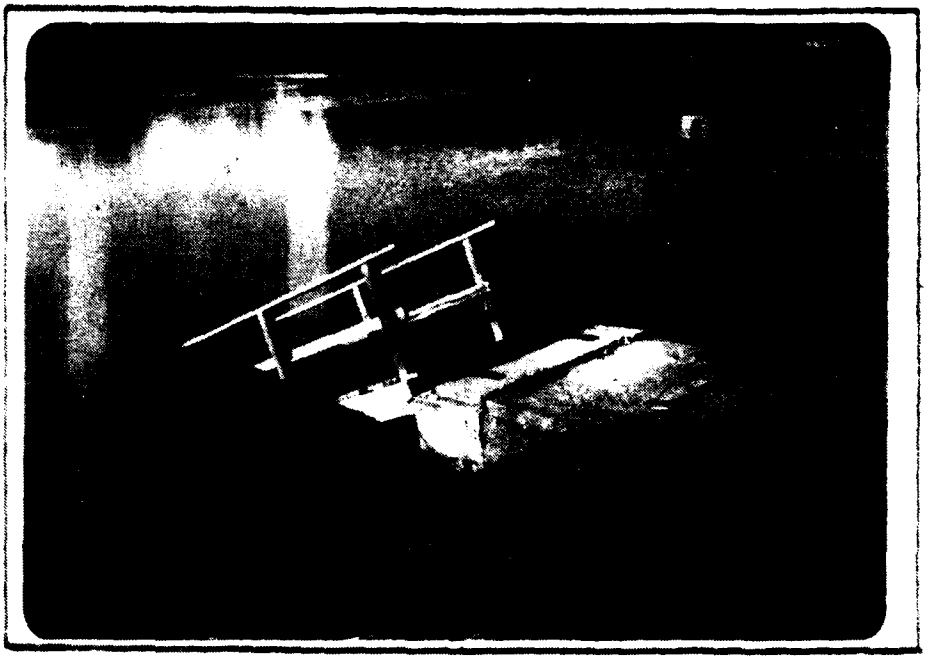


PHOTO NO. 7

PHOTO NO. 8

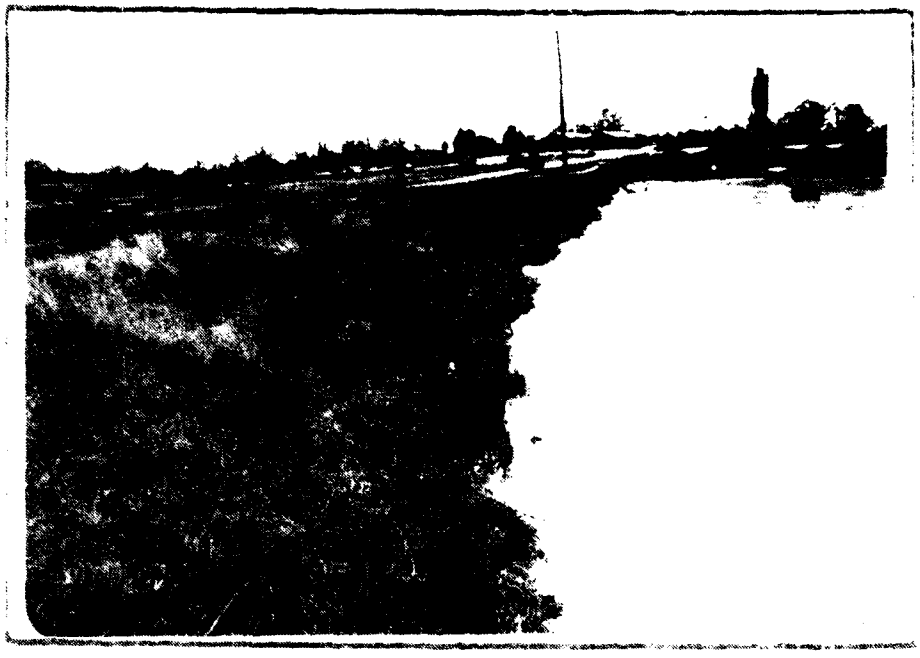


PHOTO NO. 9

PHOTO NO. 10

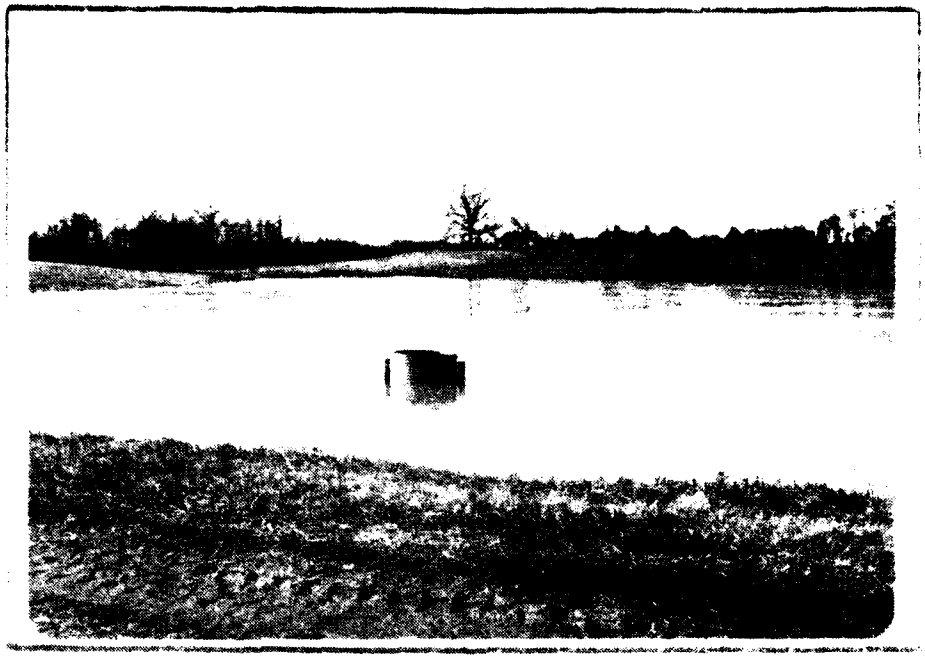


PHOTO NO. 11

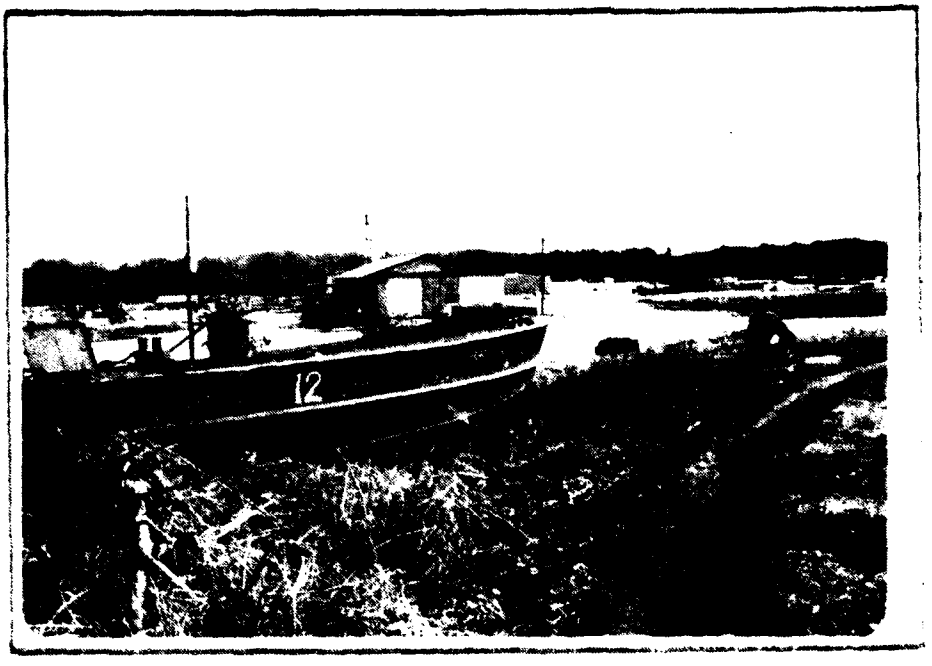
PHOTO NO 12

PHOTO NO. 13

PHOTO NO. 14

PHOTO NO. 15

PHOTO NO. 16



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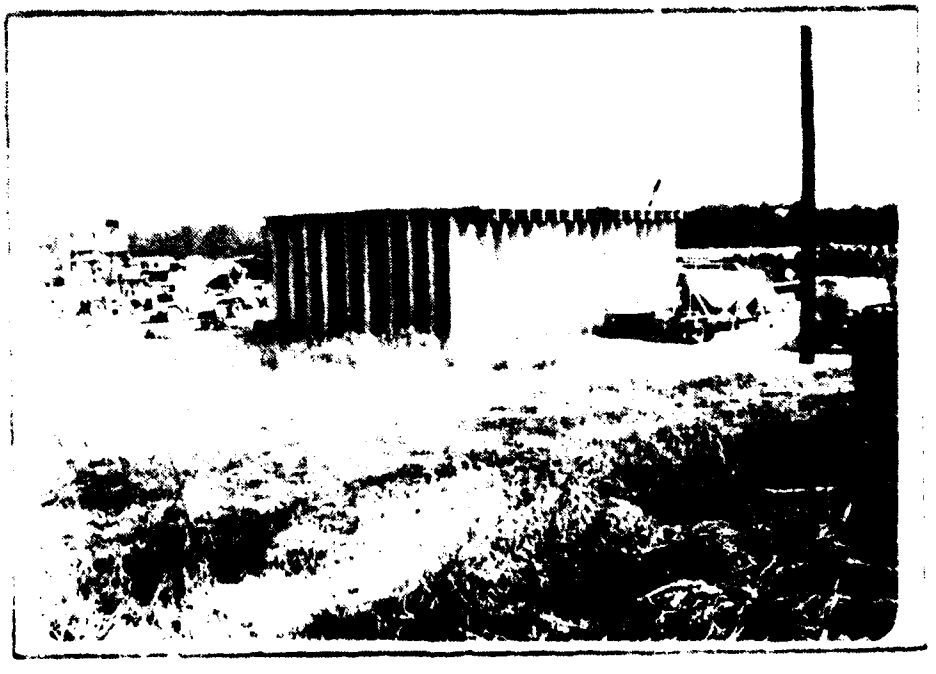


PHOTO NO. 18

APPENDIX D

TECHNICAL CRITIQUES

AND

INSPECTION CHECKLIST

Check List
Visual Inspection of Earth Dams
Department of Conservation
Division of Water Resources

Name of Dam Construction Products, Inc.

County Madison Date of Inspection February 5, 1981

ID # - State 57-7022 Federal TN 11340

Type of Dam Earth

Hazard Category-Federal High State 1

Weather Partly cloudy, windy Temperature 30°F

Pool at Time of Inspection 3.6 feet (distance from crest)

Tailwater at Time of Inspection App 0.3' (distance from stream bed)

Design/As Built Drawings Available: Yes _____ No X

Location: _____

Copy Obtained: Yes _____ No _____

Reviewed: Yes _____ No _____

Construction History Available: Yes _____ No X

Location: _____

Copy Obtained: Yes _____ No _____

Reviewed: Yes _____ No _____

Other Records and Reports Available: Yes _____ No X

Location: _____

Copy Obtained: Yes _____ No _____

Reviewed: Yes _____ No _____

Prior Incidents or Failures: Yes _____ No X

Inspection Personnel and Affiliation:

Bob Ramsey - TDWR _____

George Moore - TDWR _____

Gene Davis - TDWR _____

Anthony Privett - TDWR _____

CN-0385

I. Embankment

A. Crest

Description (1st inspection) Deep tracks from vehicles, particularly at left section. Muddy with little grass cover.

1. Longitudinal Alignment L-shaped.

2. Longitudinal Surface Cracks None

3. Transverse Surface Cracks None

4. General Condition of Surface Fair condition. No differential settlement.

5. Miscellaneous

B. Upstream Slope

1. Undesirable Growth or Debris A few small trees behind concrete wall at left section.

2. **Sloughing, Subsidence, or Depressions** None

3. **Slope Protection** Right section - grass protection. Left section - concrete wall for wave protection. Some minor erosion behind wall. Grassed slope above wall.

   a. **Condition of Riprap** N/A

   b. **Durability of Individual Stones** N/A

   c. **Adequacy of Slope Protection Against Waves and Runoff** Adequate

   d. **Gradation of Slope Protection - Localized Areas of Fine Material** N/A

4. **Surface Cracks** None

C. **Downstream Slope**

1. **Undesirable Growth or Debris** None

2. **Sloughing, Subsidence, or Depressions; Abnormal Bulges or Non-Uniformity** One hole about 5" diameter and 6-8" deep above pipe at toe. Appeared to be an animal burrow.

3. **Surface Cracks on Face of Slope** None

4. **Surface Cracks or Evidence of Heaving at Embankment Toe** None

5. **Wet or Saturated Areas or Other Evidence of Seepage on Face of Slope; Evidence of "Piping" or "Boils"** Back slope was damp but is believed to be caused by thawing of frozen ground after recent rainfall.

6. **Drainage System** None found.

7. **Fill Contact with Outlet Structure** Good condition

8. **Condition of Grass Slope Protection** Good condition.

D. Abutments

1. Erosion of Contact of Embankment with Abutment from Surface Water Runoff, Upstream or Downstream _____

None

2. Springs or Indications of Seepage Along Contact of Embankment with the Abutments None

3. Springs or Indications of Seepage in Areas a Short Distance Downstream of Embankment - Abutment Tie-in

None

II. Area Downstream of Embankment, Including Channel

A. Localized Subsidence, Depressions, Sinkholes, Etc. None

B. Evidence of "Piping", "Boils", or "Seepage" None

C. Unusual Presence of Lush Growth, such as Swamp Grass, etc. None

D. Unusual Muddy Water in Downstream Channel None

E. Sloughing or Erosion Small gully caused by surface runoff runs parallel to toe at right section and empties into stilling basin.

F. Surface Cracks or Evidence of Heaving Beyond Embankment Toe None

G. Stability of Channel Sideslopes Relatively stable. Some minor erosion.

H. Condition of Channel Slope Protection No protection. Some grass cover.

I. Adequacy of Slope Protection Against Waves, Currents, and Surface Runoff Adequate

J. Miscellaneous

K. Condition of Relief Wells, Drains, and Other Appurtenances N/A

L. Unusual Increase or Decrease in Discharge from Relief Wells N/A

III. Instrumentation None

A. Monumentation/Surveys _____

B. Observation Wells _____

C. Weirs _____

D. Piezometers _____

E. Other _____

IV. Spillways

A. Service Spillway (Service/Emergency Combination Yes __ No X)

1. Intake Structure Condition Submerged. Riser cover in good condition.

2. Outlet Structure Condition Partially submerged. Good condition at outlet.

3. Pipe Condition Unknown. No evidence of problems.

4. Evidence of Leakage or Piping None

5. General Remarks Riser is 36" CMP. Cover appears to be 4' diameter. Stilling basin in good condition. Some small gravel around sides.

B. Emergency Spillway

1. General Condition Not well defined. Good condition. No serious erosion. Thin grass cover.

2. Entrance Channel Relatively flat entrance. Large pre-cast concrete structure in entrance adjacent to dam.

3. Control Section No well defined. No obstructions.

3. **Exit Channel** Exits into open field. Spillway has flowed several times but dam has not overtopped.

4. **Vegetative/Woody Cover** Thin grass cover.

5. **Other Observations** Small drainage channel from left side of abutment.

V. Emergency Drawdown Facilities (if part of service spillway so state) Valve on upstream side of base of riser. Size unknown.

Are Facilities Operable: Yes X No ____

Were Facilities Operated During Inspection: Yes ____ No X

Date Facilities Were Last Used 1977 (to clean around lake edge)

VI. Reservoir

A. Slopes Flat

B. Sedimentation Unknown

C. Turbidity Low

VII. Drainage Area

Description (for hydrologic analysis)

Pasture, ½ woods, and cropland.

A. Changes in Land Use None

VIII. Downstream Area (Stream)

A. Condition (obstructions, debris, etc.) None

B. Slopes Gradual

C. Approximate No. Homes, Population, and Distance D/S

No homes.

D. Other Hazards Storage and maintenance facilities for Construction Products, Inc.

IX. Miscellaneous

Incidents/Failures None reported.

Observed Geology of Area Loess deposits.

X. Conclusions

Dam is stable and in good condition.

XI. Recommendations

Control erosion on crest from vehicular traffic.

Robert Ramsey
Regional Engineer

Chief Engineer

APPENDIX E

HYDRAULIC AND HYDROLOGIC ANALYSIS

HYDROLOGY AND HYDRAULICS

The Construction Products Dam is in the small size and high hazard potential category. According to OCE guidelines, it is required to pass a minimum of one-half of the Probable Maximum Flood (½ PMF) without overtopping. Six-hour rainfall depths for the Probable Maximum Precipitation (PMP) and the 100-year rainfall were obtained from the U. S. Weather Service TP-40.

The six hour PMP was estimated to be 28.7 inches producing a runoff of 23.8 inches (CN-72, AMC II) and a ½ PMF of 11.9 inches. Total inflow into the reservoir is 178 acre-feet with a peak inflow of 1126 cfs. Analysis indicates that the dam would be overtopped by this flood. The duration of flow over the dam would be about 1 hour with maximum depth of 0.3 feet. Maximum capacity of both spillways is approximately 630 cfs.

The six-hour 100-year rainfall was estimated to be 5.3 inches producing a runoff of 3.8 inches (CN-86, AMC III). Total inflow into the reservoir is 57 acre-feet with a peak inflow of 357 cfs. The emergency spillway will pass the resulting runoff with 1 foot of freeboard.

Runoff hydrographs for the drainage basin were computed using dimensionless unit hydrographs presented in Section 4, Chapter 21, of the Soil Conservation Service National Engineering Handbook. Routings through the reservoir were computed using the equation:

$$I_1 + I_2 + \left(\frac{2S_1}{\Delta t} - O_1\right) = \left(\frac{2S_1}{\Delta t} + O_2\right)$$

EVENT	ANTECEDENT MOISTURE CONDITION	
	II	III
PMF	Overtopped .8 ft for 2.3 hours	Overtopped
½ PMF	Overtopped .4 ft for 1 hour	Overtopped
100 - YEAR	Passed, 1.6 feet of freeboard	Passed, 1 foot of freeboard

Construction Products Dam

Basin Characteristics

A. Watershed Size - 180 acres

B. Average Land Slope - 5%

C. Hydrologic Soil Groups - B(Memphis), B(Lexington)

D. Time of Concentration - 1 hour

E. SCS Curve Number - 72

F. Longest Watercourse - 4,500 feet

Reservoir Characteristics

A. Normal Pool Elevation - 385.3 feet

B. Dam Crest Elevation - 388.6 feet

C. Normal Pool Area - 5.5 acres

D. Pool Length - 750 feet

E. Normal Storage - 27 acre-feet

F. Maximum Storage - 50 acre-feet

Principal Spillway

A. Type - 36 inch CMP riser

B. Crest Elevation - 385.3 feet

C. Maximum Discharge Capacity - 63 cfs

Emergency Spillway

A. Type - Unlined earth channel

B. Crest Elevation - 386.4 feet

C. Maximum Discharge Capacity - 565 cfs

Const. Products Dam
RLR

Principal Spillway Rating

Lake Elev. (ft)	Weir Flow (cfs)	Pipe Flow (cfs)
385.3	0	
385.8	10	
386.4	34	
386.5	39	
387.3		59
388.0		61
388.7		63

Weir Flow Equation:

$$Q = C L H^{3/2}$$

$C = 3.1$
$L = 9.42$ ft

Pipe Flow:

$$H = K_e V^2/2g + V^2/2g + \frac{L n^2 V^2}{(1.486)^2 R^{4/3}}$$

$$H = \left(\frac{1 + K_e}{2g} + \frac{L n^2}{2.208 \cdot R^{4/3}}\right) \frac{Q^2}{A^2}$$

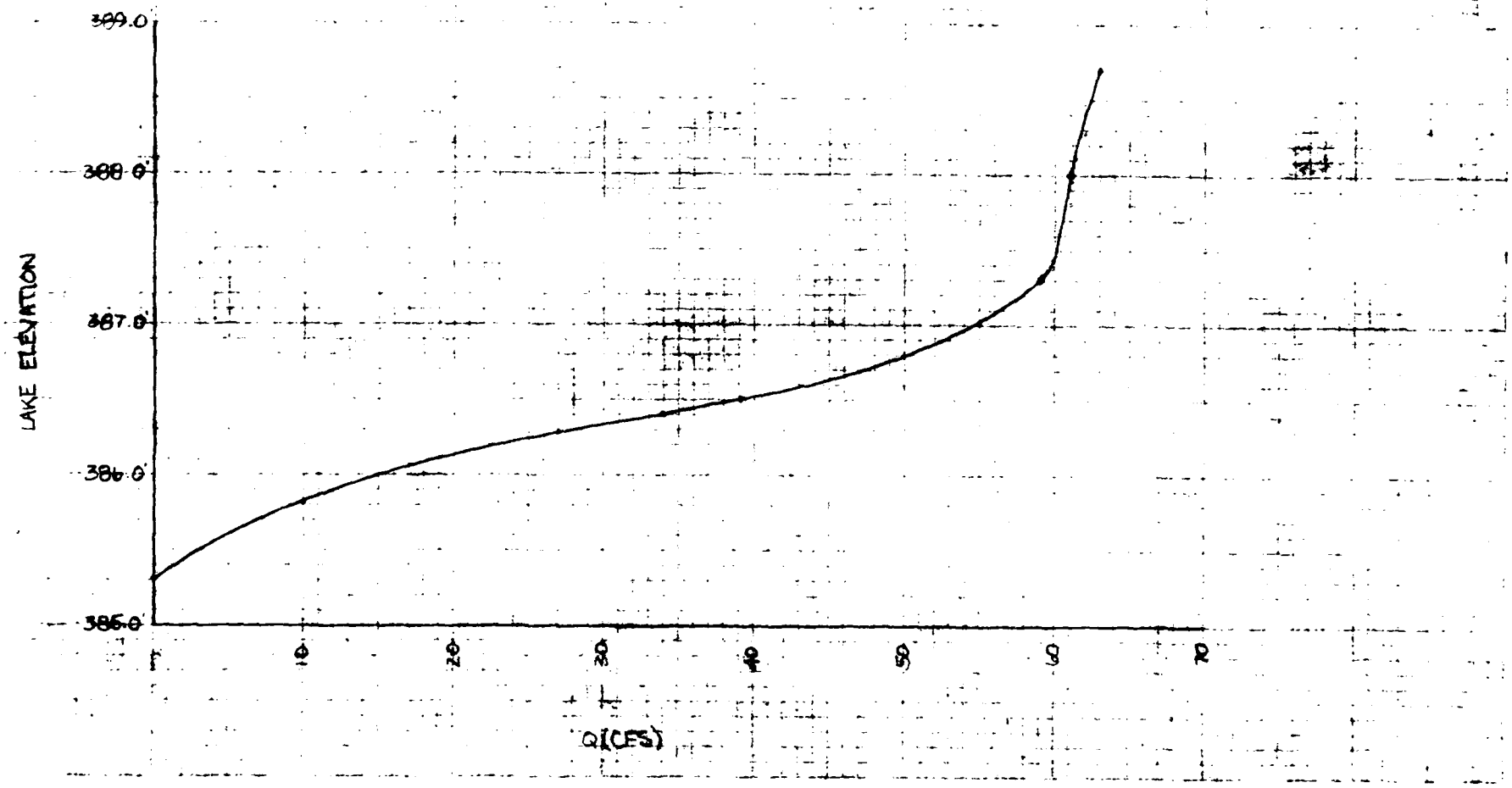
$$Q = 17.4 \sqrt{H}$$

$L = 115$ ft
$n = 0.024$
$K_e = 0.5$
$R = 0.625$ ft
$A = 4.9$ ft^2

EXTENSION OF PRINCIPLE SPILLWAY RATING FOR ELEVATIONS ABOVE TOP OF DAM.

LAKE ELEV. (Ft)	PIPE FLOW (cfs)
389.0	64
389.3	64
389.7	65

CONSTRUCTION PRODUCTS
PRINCIPAL SPILLWAY
RATING CURVE



Const. Product's Dam
RLR

Emergency Spillway Rating:

Water Surf. Elev. (ft)	Area (ft^2)	Top Width (ft)	Q (cfs)	$V^2/2g$ (ft)	Lake Elev. (ft)
386.5	3	35	5	.04	386.5
387.0	30	55	126	0.3	387.3
387.5	60	62	335	0.5	388.0
388.0	92	68	607	0.7	388.7

* Assume critical depth occurs at dam as flow enters wide pasture area. Neglect minor entrance loss.

Time of Concentration: $Lag = \frac{\ell^{0.8}(S+1)^{0.7}}{1900\,Y^{0.5}}$ $\quad S = \frac{1000}{CN} - 10$

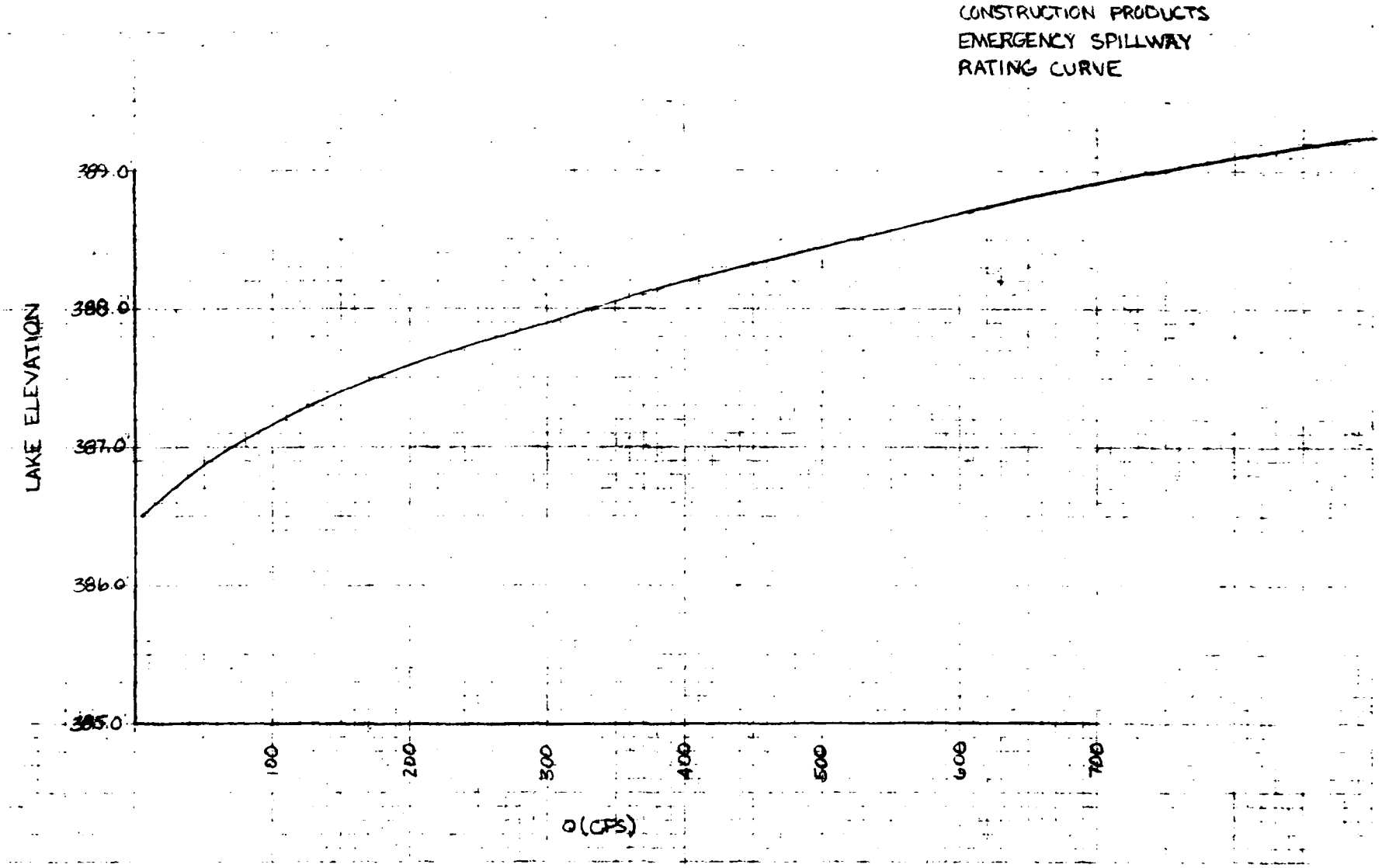
$$Lag = \frac{(4500)^{0.8}(4.89)^{0.7}}{1900\,(5)^{0.5}} = 0.6 \text{ hr.}$$

$$T_c = Lag/0.6 = 0.6/0.6 = 1 \text{ hr.}$$

EXTENSION OF EMERGENCY SPILLWAY RATING FOR ELEVATIONS ABOVE TOP OF DAM

WATER SURFACE ELEVATION (Ft)	AREA (ft^2)	TOP WIDTH (Ft)	Q (cfs)	$V^2/2g$ (Ft)	LAKE ELEVATION (ft)
388.5	131	89	902	.74	389.2
389.0	181	110	1317	.82	389.8
389.5	241	131	1855	.92	390.4

CONSTRUCTION PRODUCTS
EMERGENCY SPILLWAY
RATING CURVE



Const. Products Dam
PLR

Working Table

Elev. (ft)	S (ac-ft)	S (dsf)	$\frac{S}{\Delta t}$ (cfs)	O (cfs)	$\frac{2S}{\Delta t}+O$ (cfs)
385.3	0	0	0	0	0
386.0	5	2.5	300	15	615
386.4	7.5	3.8	456	34	946
387.0	11.5	5.8	696	124	1516
387.5	15	7.6	912	235	2059
388.0	19	9.6	1152	396	2700
388.6	23	11.6	1393	627	3413
ABOVE TOP of DAM					
389.0	25.8	13.0	1560	1104	4224
389.3	27.9	14.0	1687	1821	5195
389.7	30.7	15.5	1855	3128	6835

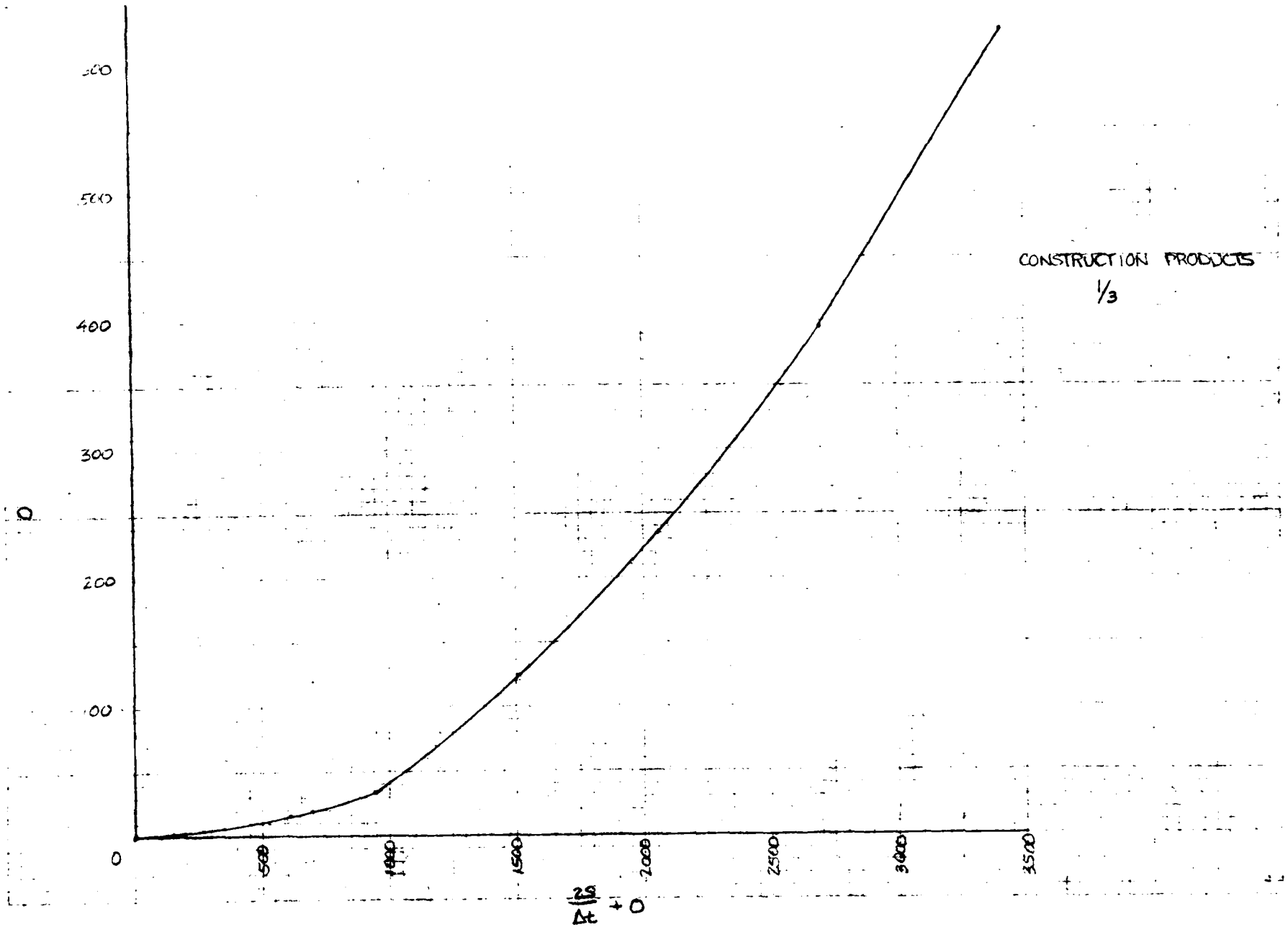
* $\Delta t = 0.2 hr = 0.00833$ DAY.

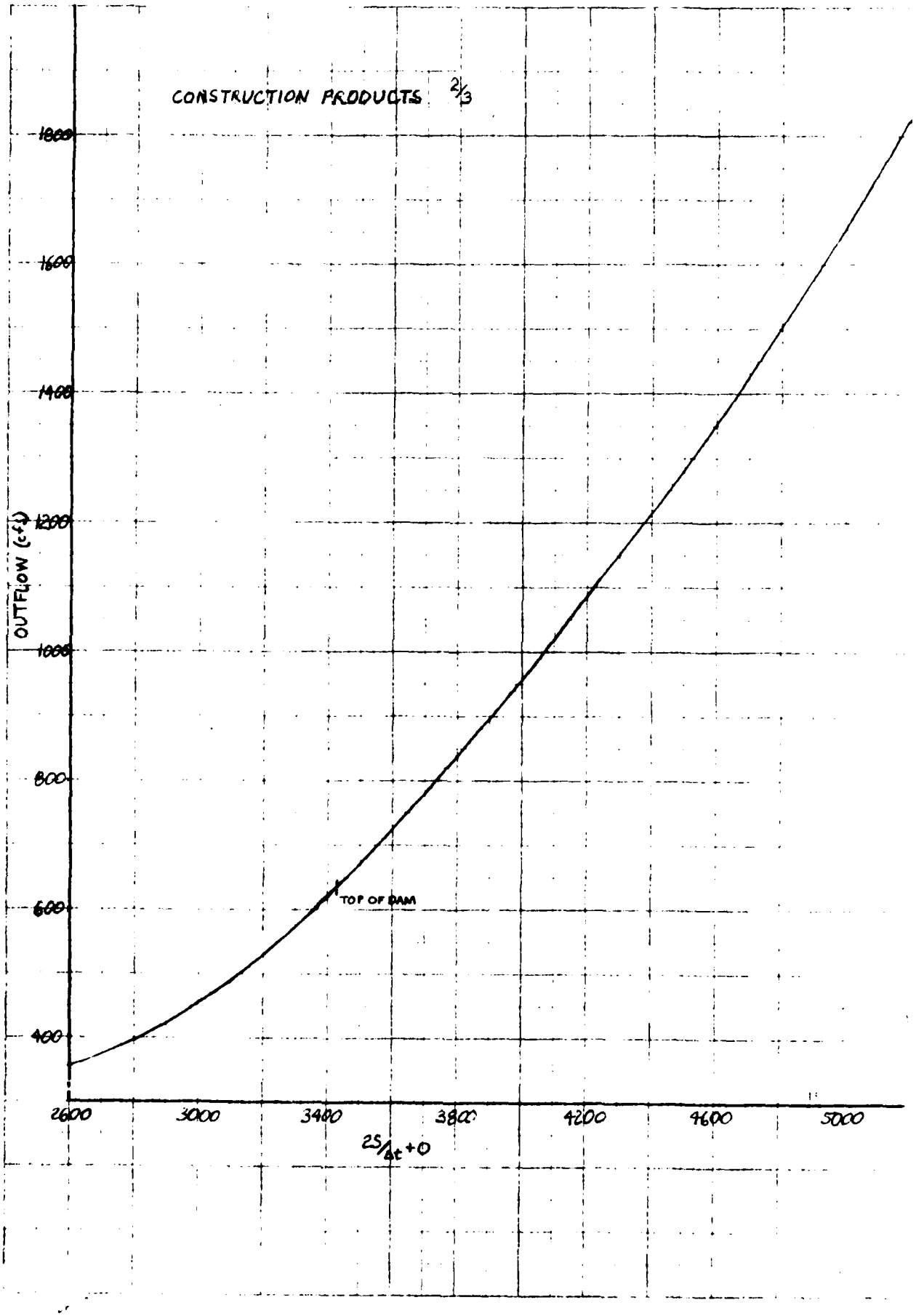
TOP of DAM OVERFLOW RATING

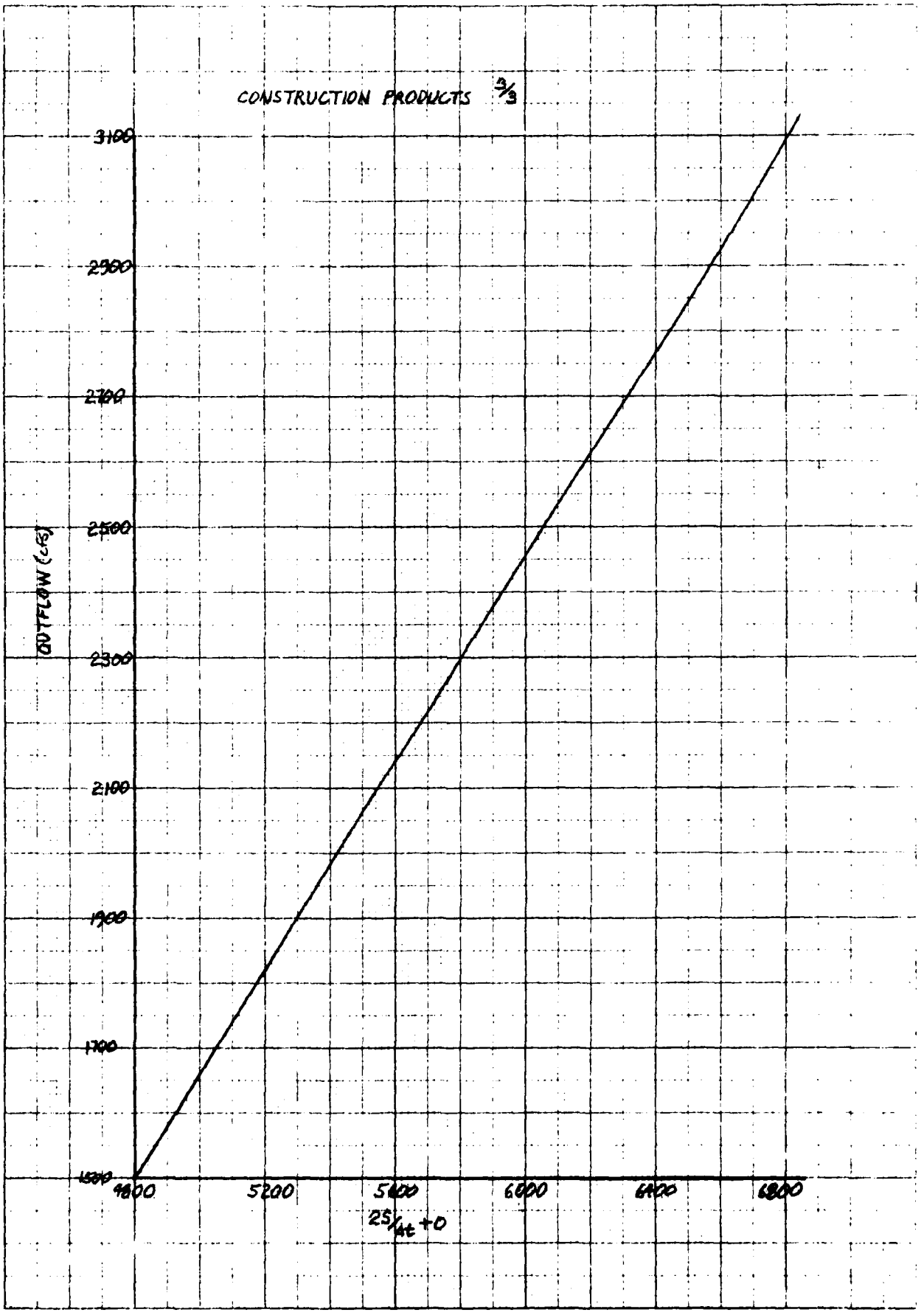
ELEV. (Ft)	H_m (Ft)	Q (cfs)
388.7	0	0
389.0	0.3	300
389.3	0.6	847
389.7	1.0	1823

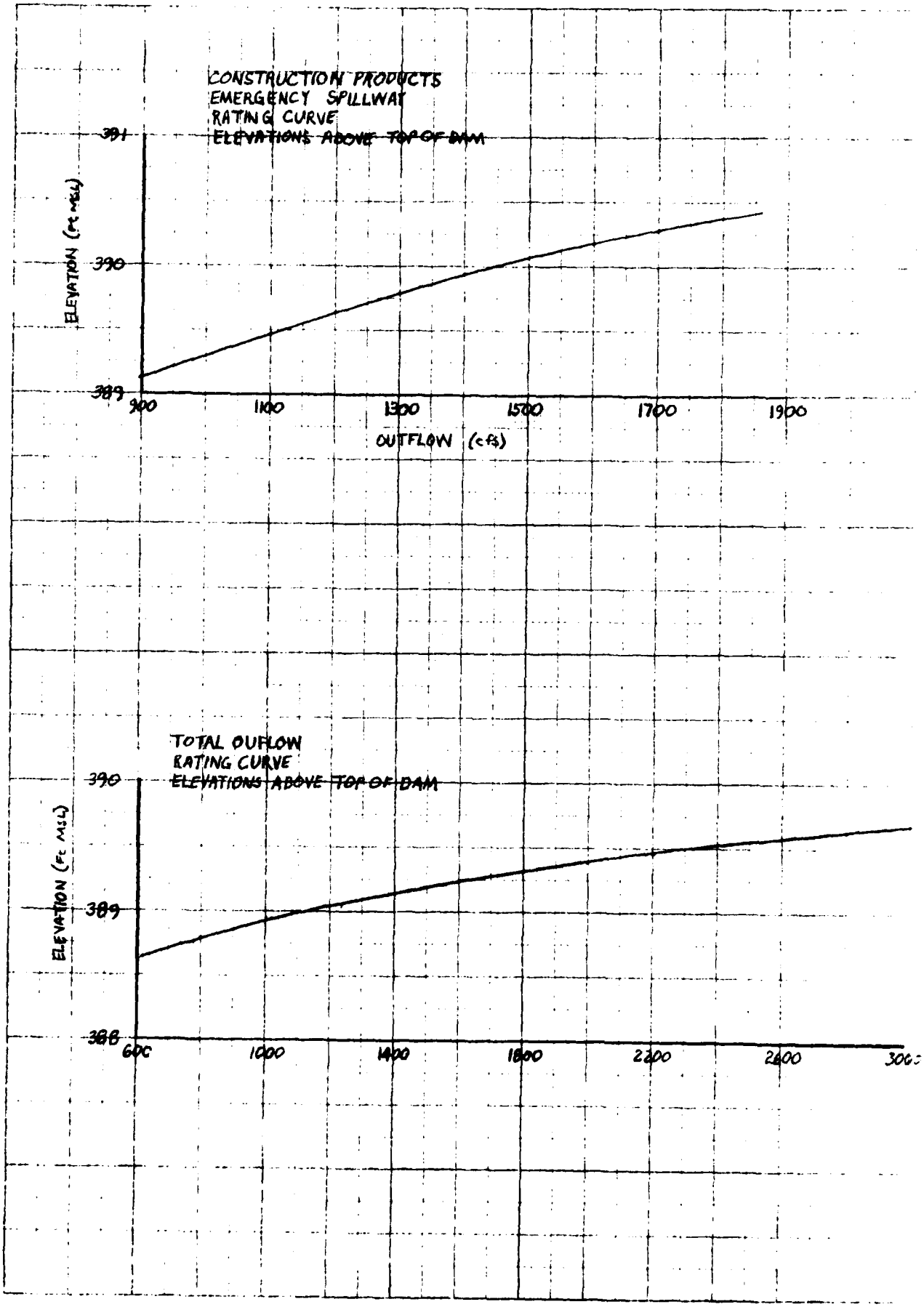
$Q = C L H_m^{3/2}$ C = 2.7 - "KINGS HANDBOOK" TABLE 5-3

L = 675 Ft


CONSTRUCTION PRODUCTS
1/3
500
400
300
200
100
0
D
0
500
1000
1500
2000
2500
3000
3500
ΔS/Δt + O


CONSTRUCTION PRODUCTS 2/3
1800
1600
1400
1200
1000
800
600
400
OUTFLOW (c.f.s.)
TOP OF DAM
2600
3000
3400
3800
4200
4600
5000
2S/Δt +O


CONSTRUCTION PRODUCTS 3/3
3100
2900
2700
2500
2300
2100
1900
1700
1500
OUTFLOW (cfs)
4800
5200
5600
6000
6400
6800
25 yr 4t +0


CONSTRUCTION PRODUCTS
EMERGENCY SPILLWAY
RATING CURVE
ELEVATIONS ABOVE TOP OF DAM
ELEVATION (Ft MSL)
391
390
389
900
1100
1300
1500
1700
1900
OUTFLOW (cfs)
TOTAL OUTFLOW
RATING CURVE
ELEVATIONS ABOVE TOP OF DAM
ELEVATION (Ft MSL)
390
389
388
600
1000
1400
1800
2200
2600

HYDROGRAPH COMPUTATION

Date _____
Computed by _____
Checked by _____

100YR ANAC III

WATERSHED OR PROJECT CONSTRUCTION PRODUCTS

STATE TN

STRUCTURE SITE OR SUBAREA MADISON

DR. AREA .28 SQ. MI. STRUCTURE CLASS C

T_c .65 HR. STORM DURATION 6 HR.

POINT RAINFALL 5.3 IN.

ADJUSTED RAINFALL:

AREAL: FACTOR _____ IN. _____

DURATION: FACTOR _____ IN. _____

RUNOFF CURVE NO. 86

Q 3.8 IN.

HYDROGRAPH FAMILY NO. 2

COMPUTED T_p .455 HR.

T_o 5.25 HR.

(T_o/T_p):

COMPUTED 11.5; USED 10

REVISED T_p .525

$q_p = \frac{484A}{REV.T_p}$ = 258 CFS.

$(Q)(q_p)$ = 981 CFS.

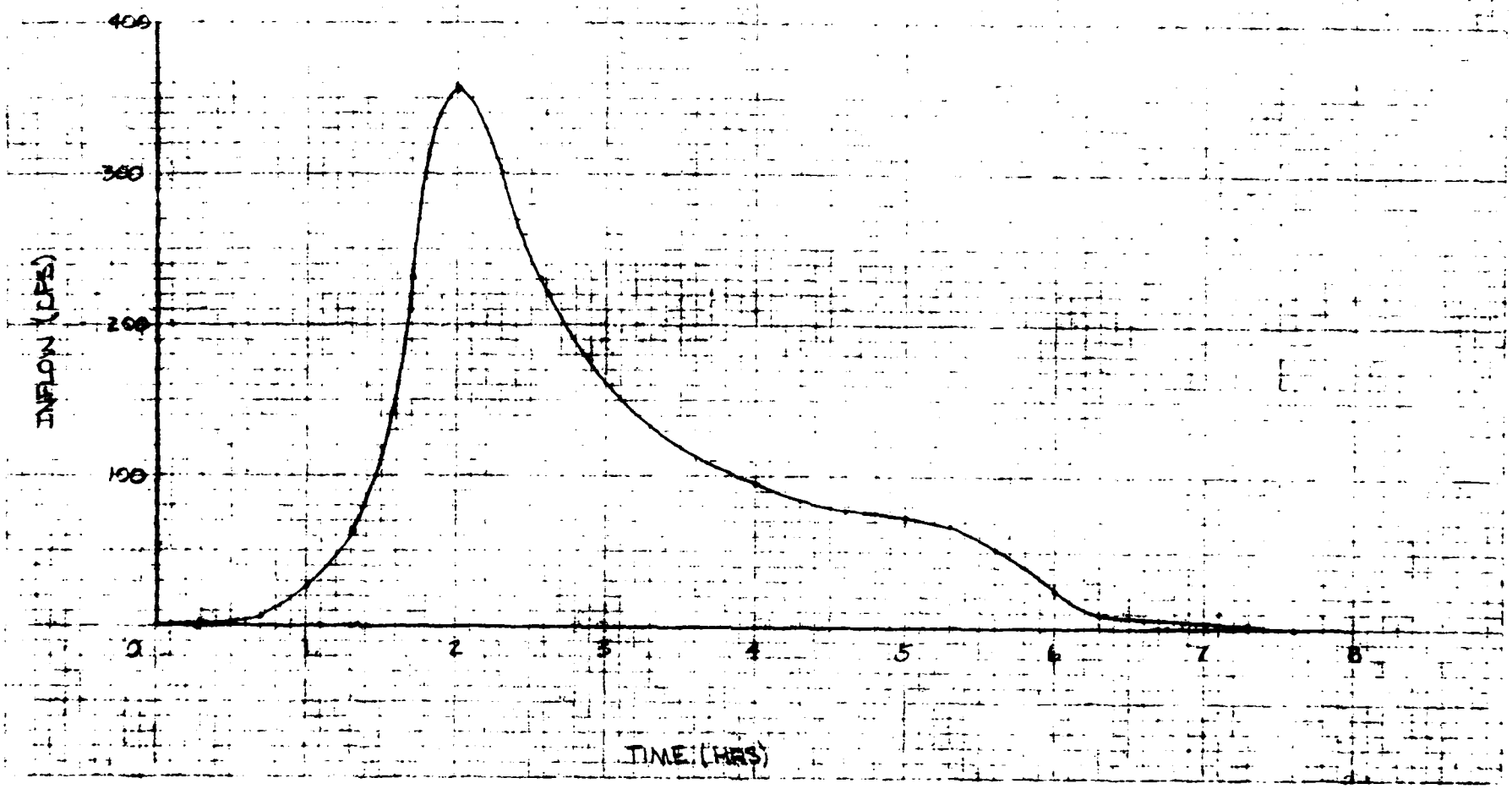
t(COLUMN) = (t/T_p)REV.T_p

q(COLUMN) = $(q_c/q_p)(Q)(q_p)$

Q(COLUMN) = $(Q_t/Q)Q$

	$t=(t/T_p)Rev.T_p$	$q=(q_c/q_p)(Q)(q_p)$	$Qt=(Q_t/Q)Q$
	t HOURS	q CFS	Q INCHES
1	0	0	
2	.3	2	
3	.7	9	
4	1.0	26	
5	1.3	62	
6	1.7	232	
7	2.0	357	
8	2.3	301	
9	2.6	222	
10	3.0	169	
11	3.3	133	
12	3.6	111	
13	4.0	95	
14	4.3	83	
15	4.6	77	
16	5.0	73	
17	5.3	68	
18	5.6	52	
19	6.0	25	
20	6.3	9	
21	6.6	4	
22	7.0	2	
23	7.3	1	
24	7.6	0	
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			

INFLOW HYDROGRAPH
CONSTRUCTION PRODUCTS
100 YR. AMC-III



Construction Permits

ROUTING TABLE

100 YR AMC-III

TIME HRS	INFLOW (cfs)	$\frac{2s}{\Delta t}$ - O(cfs)	$\frac{2s}{\Delta t}$ + O(cfs)	O(cfs)
0.0	0	0	0	0
0.2	1	1	1	0
0.4	3	5	5	0
0.6	7	15	15	0
0.8	12	33	34	1
1.0	26	67	71	2
1.2	46	133	139	3
1.4	91	250	260	5
1.6	150	461	481	10
1.8	302	849	913	32
2.0	357	1260	1508	124
2.2	378	1525	1945	210
2.4	267	1626	2120	247
2.6	222	1625	2115	245
2.8	188			
3.0	169			
3.2	140			
3.4	125			
3.6	111			
3.8	103			
4.0	95			
4.2	87			
4.4	81			
4.6	77			
4.8	75			
5.0	73			

W.S. Elev 387.6'

HYDROGRAPH COMPUTATION

Date _____
Computed by _____
Checked by _____

½ PMF ANC. II

WATERSHED OR PROJECT CONSTRUCTION PRODUCTS

STATE IN

STRUCTURE SITE OR SUBAREA MAIN(?)

DR.AREA .28 SQ. MI. STRUCTURE CLASS C

T_c _____ HR. STORM DURATION _____ HR.

POINT RAINFALL _____ IN.

ADJUSTED RAINFALL:

AREAL: FACTOR _____ IN. _____

DURATION: FACTOR _____ IN. _____

RUNOFF CURVE NO. _____

Q _____ IN.

HYDROGRAPH FAMILY NO. _____

COMPUTED T_p _____ HR.

T_o _____ HR.

(T_o/T_p):

COMPUTED _____; USED _____

REVISED T_p _____

$q_p = \frac{484A}{REV.T_p}$ = _____ CFS.

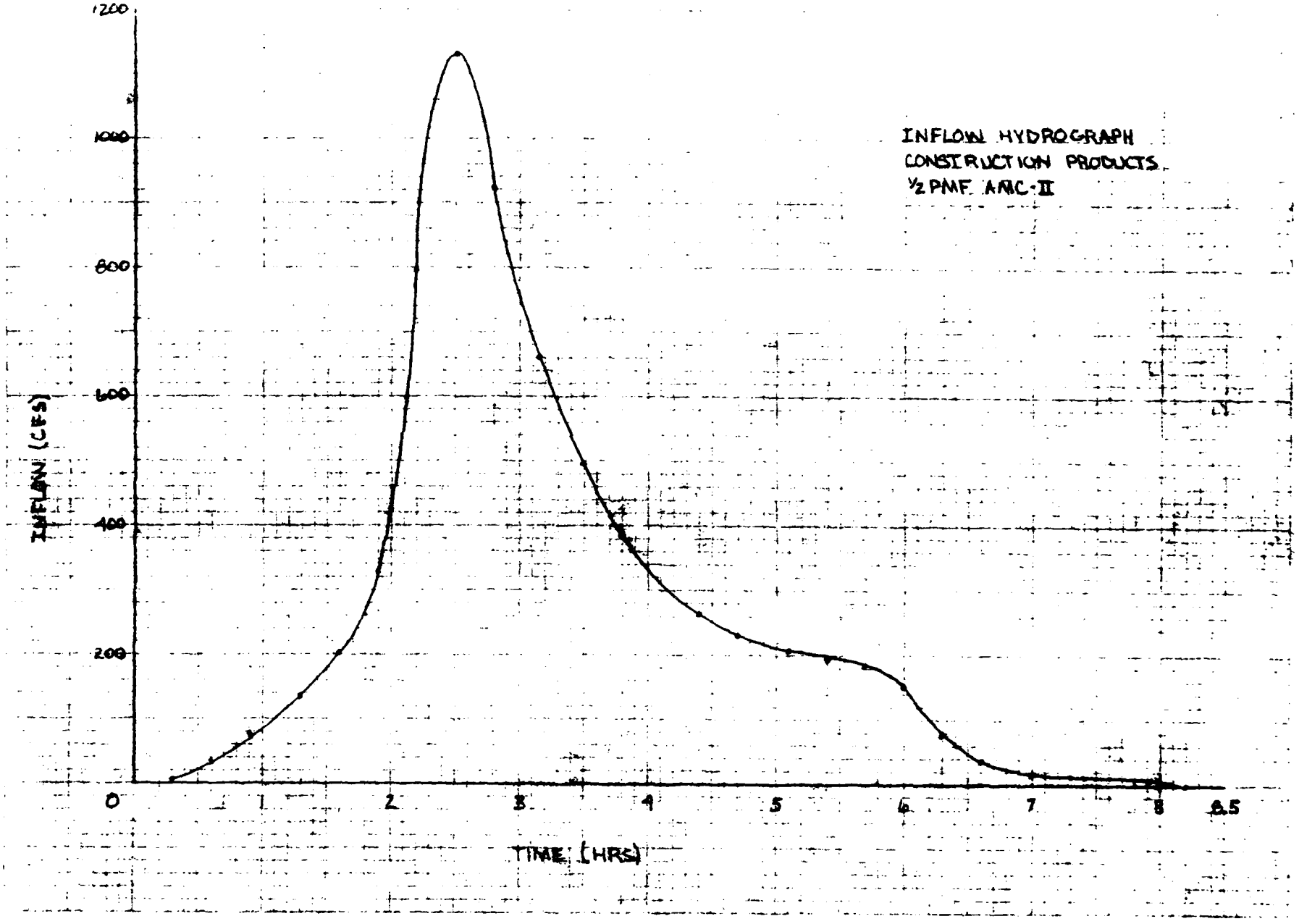
$(Q)(q_p)$ = _____ CFS.

t(COLUMN) = $(t/T_p)REV.T_p$

q(COLUMN) = $(q_c/q_p)(Q)(q_p)$

Q(COLUMN) = $(Q_t/Q)Q$

	$t=(t/T_p)Rev.T_p$	$q=(q_c/q_p)(Q)(q_p)$	$Qt=(Q_t/Q)Q$
	t HOURS	q CFS	Q INCHES
1	0.0	0	
2	0.3	6	
3	0.6	37	
4	0.9	77	
5	1.3	134	
6	1.6	[illegible]	
7	1.9	329	
8	2.2	704	
9	2.5	1126	
10	2.8	[illegible]	
11	3.2	[illegible]	
12	3.5	457	
13	3.8	389	
14	4.1	319	
15	4.4	[illegible]	
16	4.7	[illegible]	
17	5.1	[illegible]	
18	5.4	[illegible]	
19	5.7	[illegible]	
20	6.0	152	
21	6.3	77	
22	6.6	[illegible]	
23	7.0	[illegible]	
24	7.3	9	
25	7.6	6	
26	7.9	[illegible]	
27	8.2	0	
28			
29			
30			
31			
32			
33			
34			


INFLOW HYDROGRAPH
CONSTRUCTION PRODUCTS
½ PMF ANC-II
INFLOW (CFS)
1200
1000
800
600
400
200
0
1
2
3
4
5
6
7
8
8.5
TIME (HRS)

CONSTRUCTION PRODUCTS
ROUTING TABLE
½ PMF AMC - II

TIME HRS	INFLOW (cfs)	$\frac{2s}{\Delta t}$ - O(cfs)	$\frac{2s}{\Delta t}$ + O(cfs)	O(cfs)
0.0	0	0	0	0
0.2	3	3	3	
0.4	12	15	15	
0.6	37	66	67	
0.8	55	152	158	3
1.0	80	277	287	5
1.2	120	457	477	10
1.4	160	697	737	20
1.6	203	960	1000	50
1.8	260	1203	1423	110
2.0	430	1493	1893	200
2.2	794	1901	2717	408
2.4	1100	2121	3201	890 OVERTOPS DAM
2.6	1110	2011	4331	1160 ~389.0
2.8	920	2071	4041	985
3.0	750	2131	3741	805
3.2	671	2152	3552	700
3.4	540		3363	605 BELOW TOP OF DAM
3.6	450			
3.8	389			MAXIMUM DEPTH 0.3 Ft
4.0	330			DURATION 10 hr

HYDROGRAPH COMPUTATION

Date _____
Computed by _____
Checked by _____

PMF
AMC II

WATERSHED OR PROJECT CONSTRUCTION PRODUCTS

STATE TN

STRUCTURE SITE OR SUBAREA MADISON

DR.AREA .28 SQ. MI. STRUCTURE CLASS C

T_c 1.0 HR. STORM DURATION 6 HR.

POINT RAINFALL 28.7 IN.

ADJUSTED RAINFALL:

AREAL: FACTOR _____ IN. _____

DURATION: FACTOR _____ IN. _____

RUNOFF CURVE NO. 72

Q 23.8 IN.

HYDROGRAPH FAMILY NO. 1

COMPUTED T_p .7 HR.

T_o 5.64 HR.

(T_o/T_p):

COMPUTED 8.57; USED 10

REVISED T_p .564

$q_p = \frac{484A}{REV.T_p}$ = 240 CFS.

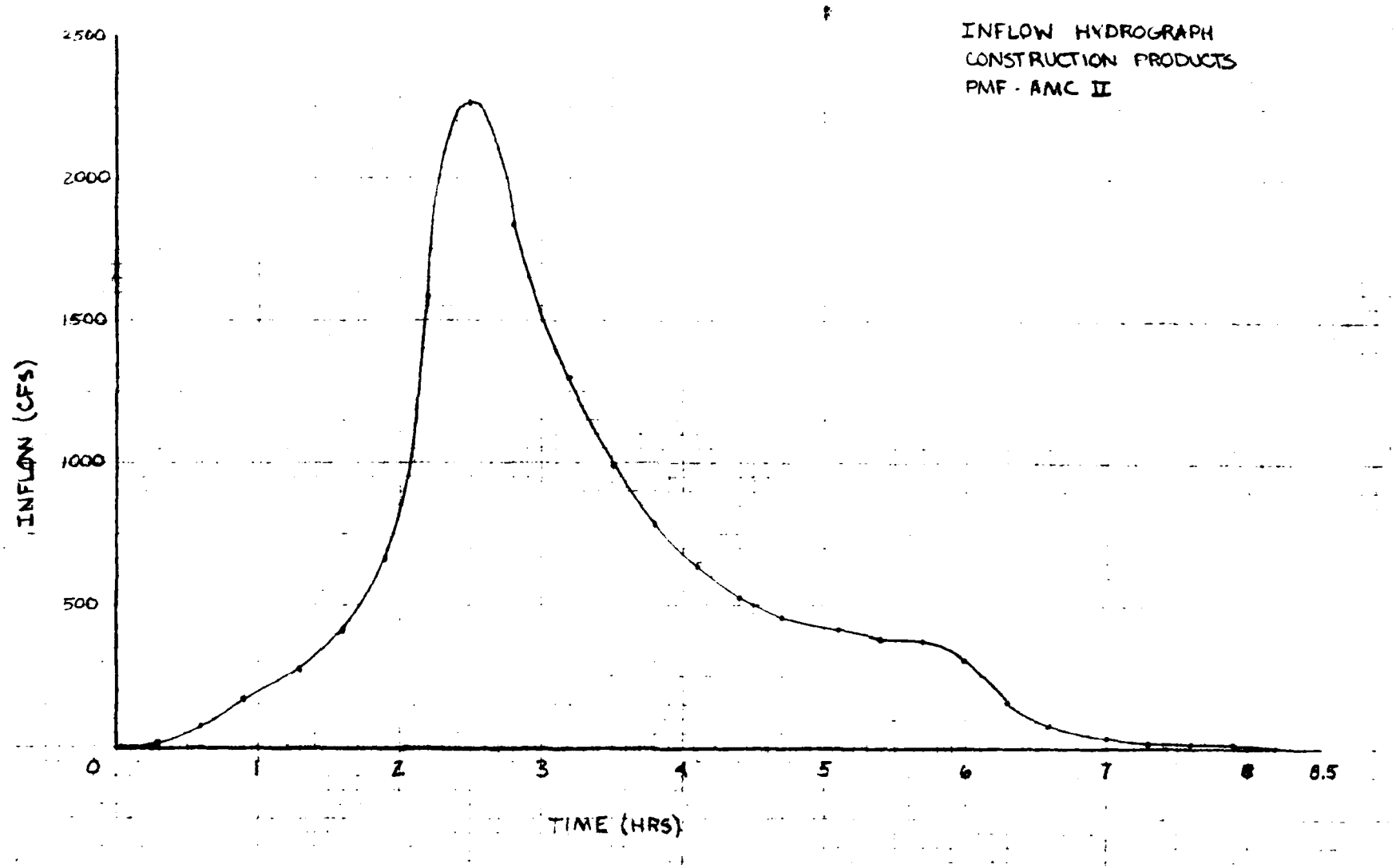
$(Q)(q_p)$= 57.2 CFS.

t(COLUMN) = $(t/T_p)REV.T_p$

q(COLUMN) = $(q_c/q_p)(Q)(q_p)$

Q(COLUMN) = $(Q_t/Q)Q$

	$t=(t/T_p)Rev.T_p$	$q=(q_c/q_p)(Q)(q_p)$	$Qt=(Q_t/Q)Q$
	t HOURS	q CFS	Q INCHES
1	0.0	0	
2	0.3	1	
3	0.6	74	
4	0.9	154	
5	1.3	268	
6	1.6	906	
7	1.9	657	
8	2.2	1568	
9	2.5	2251	
10	2.8	1807	
11	3.2	1342	
12	3.5	994	
13	3.8	777	
14	4.1	628	
15	4.4	526	
16	4.7	451	
17	5.1	417	
18	5.4	388	
19	5.7	371	
20	6.0	303	
21	6.3	154	
22	6.6	69	
23	7.0	34	
24	7.3	17	
25	7.6	11	
26	7.9	10	
27	8.2	0	
28			
29			
30			
31			
32			
33			
34			


INFLOW HYDROGRAPH
CONSTRUCTION PRODUCTS
PMF - AMC II
2500
2000
1500
1000
500
INFLOW (CFS)
0
1
2
3
4
5
6
7
8
8.5
TIME (HRS)

CONSTRUCTION PRODUCTS

ROUTING TABLE

PMF AMC-II

TIME HRS	INFLOW (cfs)	$\frac{2s}{\Delta t}$ - O(cfs)	$\frac{2s}{\Delta t}$ + O(cfs)	O(cfs)
0.0	0	0	0	0
0.2	7	7	7	0
0.4	25	38	39	1
0.6	74	133	137	2
0.8	130	325	337	6
1.0	200	621	655	17
1.2	250	963	1071	54
1.4	325	1280	1538	129
1.6	406	1565	2011	223
1.8	615	1852	2586	367
2.0	810	2131	3277	573
2.2	1588	1919	4529	1305 OVERTOPS
2.4	2225	1252	5732	2240
2.6	2225	1262	5702	2220
2.8	1839	1476	5326	1925
3.0	1505	1780	4820	1520
3.2	1342	1877	4627	1375
3.4	1090	1989	4309	1160
3.6	930	2079	4009	965
3.8	777	2126	3786	830
4.0	675	2138	3587	720
4.2	600		3413	627 BELOW TOP OF DAM.
4.4	525			
				MAXIMUM DEPTH 0.8 ft
				DURATION 2.2 hr

APPENDIX F

CORRESPONDENCE

TENNESSEE DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES
4721 TROUSDALE DRIVE, NASHVILLE 37220
615/741-6860

Certified

December 1, 1980

Mr. Wade Thomson
Construction Products Inc.
Ashport Road
Jackson, TN 38301

Dear Dam Owner:

As provided by the State Safe Dams Act, Tennessee Code Annotated, Sections 70-2501 to 70-2530, non-federal dams in Tennessee must be inspected and certified for safety by our agency. According to our records, you are identified as the owner of Const. Products Dam, located in Madison County, Tennessee. Enclosed for your information and review is a copy of our inventory record on the structure along with a copy of the Act and adopted rules and regulations.

Tentative plans are to schedule a safety inspection of your dam within the next few months. A staff engineer will very shortly be in further communication with you to discuss the pending inspection and your responsibilities under the Safe Dams Act. Your immediate attention, however, is called to the matter of maintaining the earthen dam with a good grass cover and clear of all brush, undergrowth and tree growth. If these conditions do not presently exist, please make plans to remove the brush, undergrowth and all trees less than two inches in diameter as soon as possible. Larger trees may have to be removed at a later date but must be done so under the direction of an experienced engineer.

Please let me, or our Chief Engineer, Mr. Ed O'Neill, know of any assistance we might be.

Very truly yours,

Robert A. Hunt, P.E.
Director, Division of Water Resources

RAH:lt

Enclosures

NON-FEDERAL DAM INSPECTION REVIEW BOARD
PO BOX 1070
NASHVILLE, TENNESSEE 37202

ORNED-G

Commander
US Army Engineer District, Nashville
PO Box 1070
Nashville, TN 37202

1. The Interagency Review Board, appointed by the District Engineer on 8 October 1980, presents the following recommendations after meeting on 21 May 1981 to consider the Phase I investigation report on Construction Products Dam inspected by the Tennessee Department of Conservation.

2. An emergency action plan should be developed, including a warning system to alert downstream residents, in the event a serious condition develops with the project.

3. The board is in agreement with report conclusions and recommendations following minor revisions.

FRANK B. COUCH
Chief, Geotechnical Branch
Chairman

JAMES SIMS
Design Engineer
Alternate, Soil Conservation Service

ROBERT A. HUNT
Director, Div of Water Resources
State of Tennessee

H. F. PHILLIPS
Chief, Hydraulics Section
Alternate, Hydrology & Hydraulics Branch

EDWARD B. BOYD
Hydrologic Technician
Alternate, US Geological Survey

L. E. LOCKETT
Structural Engineer
Alternate, Design Branch


ATE
LME